

Air Trails

NOVEMBER 1954 / 35 CENTS

HOBBIES

FOR YOUNG MEN



**Cash Awards
For Winning
Plane Plans!**

New Boat Design
Contest Starts
This Issue!



**Can You Draw Cars?
Enter Your Sketches!**



CAL SMITH

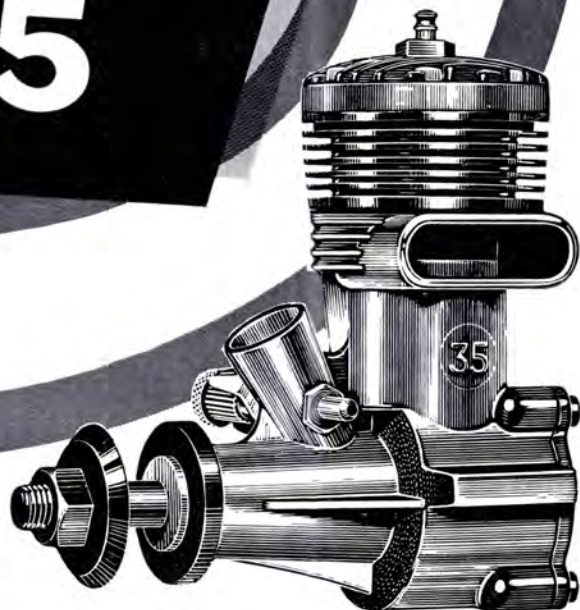
- SHOULD YOU GO INTO ENGINEERING? YOU CAN TEST YOURSELF!
- AUTO PROGRESS: THE OLDSMOBILE STORY • MODEL THE PEGASO

DESIGNED FOR STUNT



K&B TORPEDO .35

K&B TORPEDO .35 Designed expressly for super stunt flying. Precision engineered for maximum strength with minimum weight. The new .35 is rugged, dependable. It is K&B championship quality.



**K&B...PRODUCERS OF
CHAMPION ENGINES**

NOW... HAS a NEW CHALLENGER

Already thousands of the NEW TORPEDO .35's are in action on the flying fields of the U. S. and other countries. As you know the TORPEDO .35 is designed for stunt and we are pleased to say that reports have been sent to us by outstanding stunt flyers and designers like LOU ANDREWS, DON FERGUSON, GEORGE ALDRICH, JOHN LENDERMAN, BOB ELLIOT & DON STILL to name a few. We invite you to try the TORPEDO .35 today and join the happy throng of satisfied modelers who now fly the NEW TORPEDO .35.

SPECIFICATIONS

Bore .790 Stroke .720
Displacement .35 Weight 7½ oz.
Peak H.P. .60 at 14,000 RPM
Recommended prop 10" diameter 6" pitch
Price \$14.95

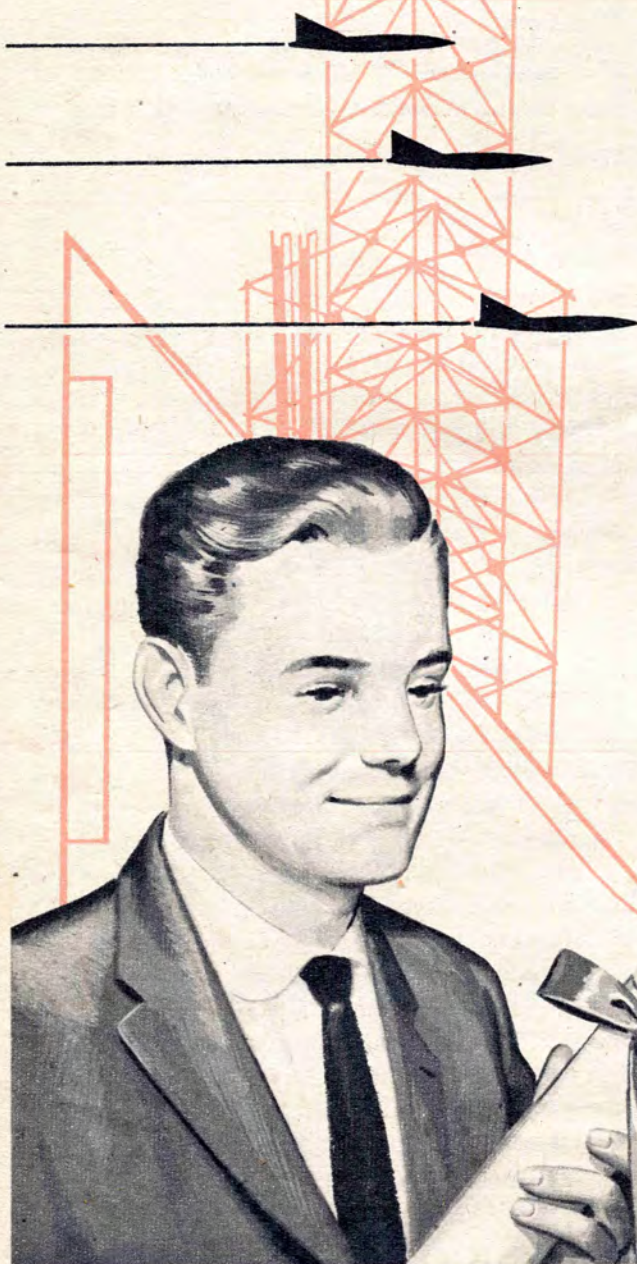


K&B MANUFACTURING CO.

224 East Palmer St., Compton, California



PARKSMEN... **TOPS** IN AVIATION



Parksmen are known throughout the world for being tops in aviation. And no wonder — for at Parks they have obtained the finest possible education offered in aviation. Their schooling has been thorough — not only in technical subjects — but in academic subjects as well. Parks recognizes that a man, in order to succeed, must know not only how to **MAKE** a living — but **HOW TO LIVE** and get along with others!

At Parks you may earn a Bachelor of Science Degree in Aeronautics covering any one of three fields — Aeronautical Administration, Aeronautical Engineering or Maintenance Engineering. No matter which field you choose, you will be given the type of education that has made Parks and Parksmen leaders in aviation. Air Force ROTC allows you to complete your education without interruption and receive a commission as 2nd Lieutenant in the Air Force Reserve.

Fill out the coupon and find out how you may attend Parks College — your first step in becoming a member of the select group — the **PARKSMEN**!

**Next Parks enrollment date —
January 3, 1955**

MAIL THIS COUPON *today*

NON-CREDIT COURSES — CAA approved flight courses leading to Private, Commercial, Instrument, Flight Instructor and Multi-engine ratings. A&E mechanic courses also available. Check coupon for details.



PARKS COLLEGE OF SAINT LOUIS UNIVERSITY
2114 Cahokia Road, East St. Louis, Ill.

I am interested in:

☐ Aeronautical Engineering	☐ Aeronautical Meteorology
☐ Maintenance Engineering	☐ Flight Courses
☐ Aeronautical Administration	☐ A & E Mechanic Course
	☐ Information on Public Law 550

Name..... Age.....
Address..... Zone.....
City..... State.....

PARKS COLLEGE OF SAINT LOUIS UNIVERSITY

2114 CAHOKIA ROAD • EAST ST. LOUIS, ILL.

HOBBIES

FOR YOUNG MEN

Editor.....Albert L. Lewis
 Technical Editor....Alex Dawydoff
 Art Director.....Aubrey Kochman

Editorial Production...Carl Happel
 Assistant to Editor....Rose Borello
 Editorial Assistant.....Eve Stein

Editorial Offices Located at 304 E. 45th Street, New York 17, N. Y.



As is our usual custom from time to time we salute all those who enter our design competitions by devoting a cover to the best entries. Now we have cars and boats to add to the planes. Cal Smith is the artist.



TechEd takes radiator's temperature after hill climb (see more, pg. 40)



First cucumbers, then this educated mule mean college dollars (pg. 22)



Outstanding Air Force model plane record holder reveals all (pg. 48)

Models of Merit.....	6
The Readers Write.....	10
Auto Design Competition—Money for Your Dream Car.....	12
Airplane Winners—Realism-in-Models Photo Contest.....	14
Aqua-tivities—Model Boat News.....	15
Everything Under Control: R/C News—H. G. McEntee.....	16
Speaking of Hobbies.....	19
Should You Go into Engineering?—Dr. A. P. Johnson.....	20
Teen-age Success Story.....	22
Auto Progress: The Oldsmobile Story—Douglas Rolfe.....	24
Samba Sled: Air-prop Model Boat—Bill Baughman.....	26
Boat Design Competition—Cash Prizes Here!.....	27
Look Out Below!—Basement Railroad.....	28
Air Progress: Post-WW II Japanese Air Force—Rolfe.....	30
Hobby-Model World—Reports from All Over.....	32
Aircraft Design Competition—Cash Prizes.....	33
World Model Air Olympics—Photo Report.....	34
All Class "Neptune" F/F Plane—S/Sgt. Al St. Clair.....	36
Model the Pegaso "Berlinette" Sportscar—Joe Wherry.....	38
Yankee "Monte Carlo"—Sportscar Rally in Pictures.....	40
"Mactuator" Magnetic Actuator for R/C—H. McEntee.....	42
Photo Story of National Modelplane Championships.....	44
"Squeaker" Speed Plane—Tommy Baker.....	48
How to Become a Trained Technician—Part Two.....	52
Round the Track—Miniature Race Cars.....	58
Trick Pix—Cash in with Your Camera.....	62
Colt Derringer Model #2—Andrew Jamrisko.....	68
The Mac "9" Is a Diesel Now Too—Engine Report.....	70
Bike Photo Winners.....	72
Contest Calendar.....	73
Winners in Bobby Benson Ranch Barn Model Contest.....	74
Cycle Chatter.....	76
My Favorite Model—John Schneider.....	86
Hobby Club Emblems—Cash Prizes for Your Club Insignia.....	88
Trick Stuff—Money for Your Magic.....	90
Hobby Showcase.....	92
What's Your Hobby?—Cash Prizes for Photo and Report.....	96

Air Trails HOBBIES For Young Men published monthly by Street & Smith Publications, Inc., at 575 Madison Ave., New York 22, N. Y. Entered as second class matter at the post office at New York, N. Y. Authorized as second class mail Post Office Dept., Ottawa, Canada. Copyright 1954 by Street & Smith Publications, Inc., in the United States and countries signatory to the Berne Convention and Pan American Convention. 35c per copy. This issue is Vol. XLIII, No. 2. We cannot accept responsibility for unsolicited manuscripts or art work. All submissions must include return postage. Printed in U.S.A.

LOOKING FOR SECURITY?

LOOK TO

AVIATION!

Air Industry Passes Autos in Employment

LOS ANGELES, Calif., June 24 (AP) — The aircraft industry is the largest manufacturing employer in the United States.

The Aircraft Industries Assn. reported Thursday that America's plane manufacturers have surpassed the auto industry in total manpower. The car industry long had been the leader. Aircraft manufacturing now employs 823,000, compared with 786,000 for automobiles, the AIA reports. The figures are from the federal bureau of labor statistics.

Yes, aviation . . . one of the most challenging and profitable of all industries . . . also offers you greater job security. This year, for the first time, there are more jobs in aviation than in any other manufacturing industry . . . and aviation is *still growing, still developing!*

Hitch your wagon to this fast-rising star . . . train for a secure and interesting future at Spartan, *the University of Aviation*. Spartan offers a wide range of courses, complete facilities, and instruction from an industry-trained faculty. What's more, at Spartan you work on "live" aircraft and components — exactly the same as you'll meet later on the job.

Don't put it off . . . do something about your future *now*. Clip and mail the coupon below, and get acquainted with Spartan. Get started on a career that will give you Opportunity, Security and Variety of Work.

SPARTAN
A UNIVERSITY OF AVIATION

SCHOOL of AERONAUTICS
MAXWELL W. BALFOUR, DIRECTOR

COLLEGE of ENGINEERING
ADDRESS: DEPT. AT-114

TULSA, OKLAHOMA

Maxwell W. Balfour, Director

Spartan School of Aeronautics Dept. AT-114
Tulsa, Oklahoma

Please send complete information immediately.

Name _____ Age _____

Address _____

City _____ State _____

Indicate which of these branches interests you:

- | | |
|--|---|
| ☐ Aircraft Engine Mechanics | ☐ Flight Engineer |
| ☐ Instrument Technician (Standard and Electrical) | ☐ Link Trainer |
| | ☐ Instructor |
| | ☐ Parachute Rigger |

Spartan is approved for training under the G. I. Bill of Rights

FOR COMPLETE INFORMATION MAIL COUPON TODAY



AERONAUTICAL ENGINEERING DESIGN

HIGH PAYING POSITIONS AND EXCEPTIONAL OPPORTUNITIES AWAIT TRAINED AERONAUTICAL ENGINEERING DESIGNERS

The Aircraft Industry needs TRAINED MEN and needs them badly. Establish yourself NOW with CAL-AERO TECHNICAL INSTITUTE TRAINING—and step right into one of these good Aviation Jobs WITHOUT BREAK-IN—AND AT TOP PAY... WE CANNOT SUPPLY THE DEMAND FOR CAL-AERO GRADUATES—

AERONAUTICAL ENGINEERING DESIGN

MASTER AVIATION MECHANICS

(Aircraft & Engine Mechanics)

SPECIAL POWER PLANT MECHANICS

(Aircraft Engine Mechanics)

JET ENGINE MECHANICS

MAXIMUM TRAINING IN MINIMUM TIME

Since 1929—10,000 successful civilian graduates—26,000 pilots and 8500 technicians trained for U.S. Military Forces.

Cal-Aero Technical Institute is a subsidiary of Grand Central Aircraft Co., world's largest maintenance and overhaul facility—and carries topmost recommendations and approvals from military, government, educational and foremost aircraft industry sources.

APPROVED FOR VETERANS

MAIL COUPON TODAY

«AL-AERO»
TECHNICAL INSTITUTE
GRAND CENTRAL AIR TERMINAL
GLENDALE 1, CALIFORNIA

Please send catalog & full information FREE

- ☐ AERONAUTICAL ENGINEERING DESIGN
- ☐ MASTER AVIATION MECHANICS
(Aircraft & Engine Mechanics)
- ☐ SPECIAL POWER PLANT MECHANICS
(Aircraft Engine Mechanics)
- ☐ JET ENGINE MECHANICS
- ☐ HOME STUDY COURSES
 - ☐ Aeronautical Drafting
 - ☐ Aircraft Blueprint Reading
 - ☐ Stress Analysis and Design

name _____ age _____

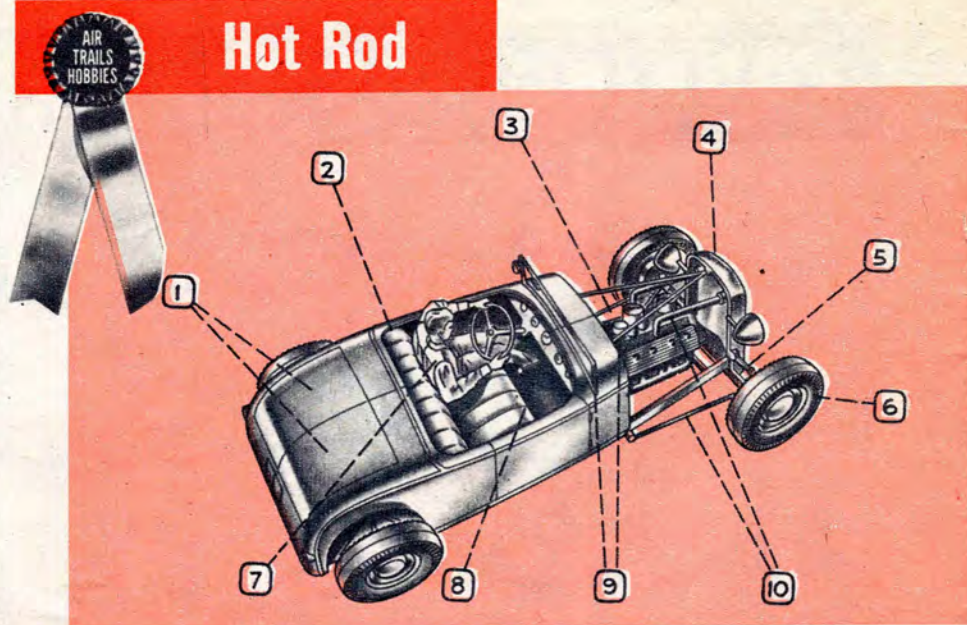
address _____

city _____ zone _____ state _____

High School Graduate—Yes ☐ No ☐

ATH-IT Veteran ☐ Non-veteran ☐

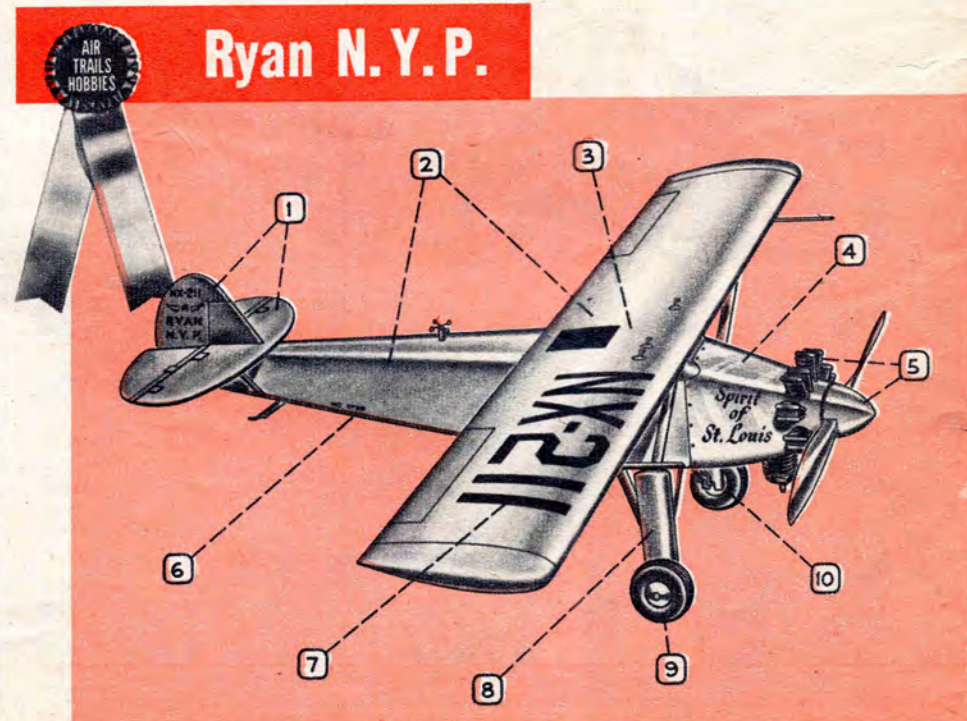
Hot Rod



"Something old and something new" may result in hot combination. This is a 1932 Ford V-8 with channeled body, hopped-up engine by Monogram Models of Chicago. Cellulose acetate parts include 1) body molded in halves; 2) seat assembly; 3) engine formed in halves with separate heads; 4) radiator and headlights; 5) axle and steering members; 6) two-piece scale tire-wheel assemblies; 7) scale driver molded in four pieces; 8) complete dash and shift lever; 9) windshield frame and radiator braces; 10) radiator hoses and radius rods.

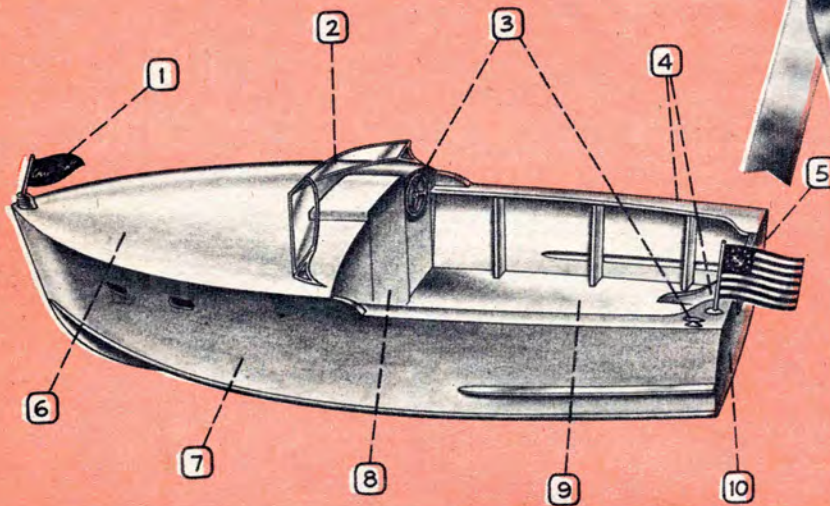
That stands for "New York to Paris" and in this instance means the Spirit of St. Louis. Now modeled by Scientific of Newark, N. J. as a control line craft, this features 1) die-cut balsa tail group; 2) shaped, hollowed balsa fuselage; balsa wing finished to airfoil shape; 3) all-metal parts included for U-control system; 4) finished metal cowl and metal engine mount; 5) plastic propeller spinner and die-cut parts for dummy engine; 6) balsa fuselage bottom; 7) scale decal numerals, windows and insignia; 8) removable scale balsa gear struts; 9) metal bushed rubber wheels; 10) formed steel wire landing gear struts.

Ryan N.Y.P.



Kit's "Kit"

AIR TRAILS HOBBIES

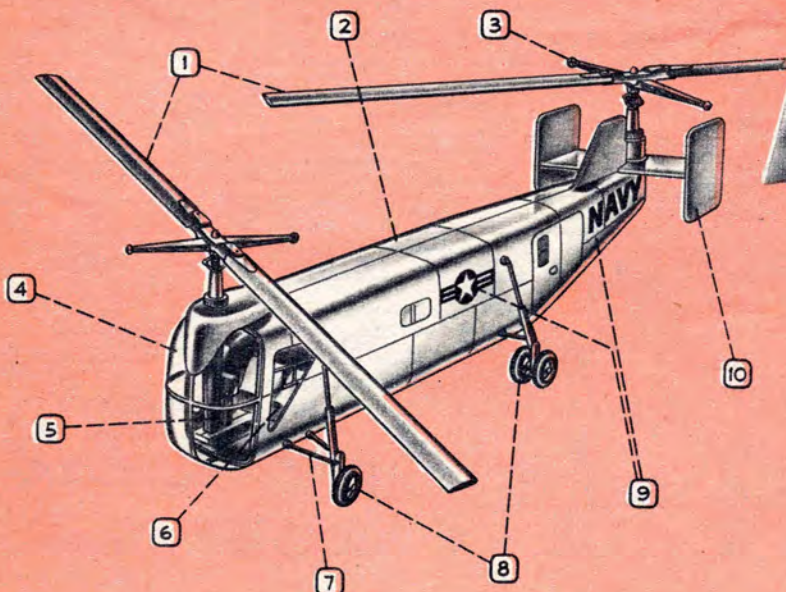


That's right. This is a model kit by Berkeley Models, Hempstead, N. Y., of a Chris-Craft build-it-yourself "kit" boat, a 16' outboard cruiser. Worthy of note: 1) cast metal bow fitting and printed flag; 2) die-cut plastic windshield; 3) die-cast wheel and cleat, printed flag; 4) die-cut balsa coaming strips and transom reinforcement; 5) 1" scale electric or A/2 gas outboard motors recommended; 6) formed vinyl foredeck; 7) completely formed vinyl hull; 8) die-cut balsa bulkheads, etc.; 9) die-cut balsa formers and flooring sheets; 10) die-cut plywood transom reinforcements.

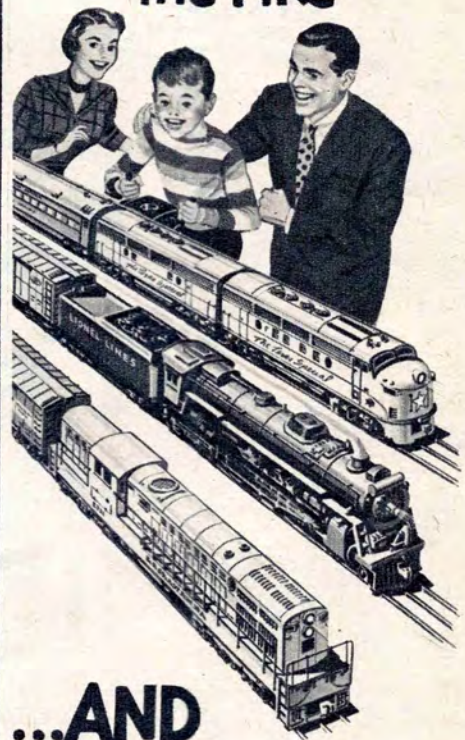
Already noted for the wealth of intricate and authentic detail offered on their 1912 Mercer and 1914 Mercedes racers, the Saunders-Swader Toy Co., Aurora, Ill., now presents two Bell copters one of which is the sub-hunting HSL-1-K shown here. Items are: 1) silver Polystyrene rotor blade assemblies; 2) complete fuselage molded in halves; 3) flybar assemblies; 4) clear molded front cockpit enclosure; 5) control panel and seat assembly; 6) clear molded side windows; 7) complete landing gear legs; 8) scale rubber wheels; 9) authentic Navy decal insignia; 10) separately formed stabilizer and rudder units.

Twin Rotors

AIR TRAILS HOBBIES



Nothing Like 'em Ever Came Down the Pike



...AND WHAT A "PIKE"!

Nothing else can match the thrilling realism of mighty Lionel locos and new scale-modeled rolling stock. Exclusive *Magne-Traction* gives 'em more speed, more climb, more pull, more control. Real R. R. remote-control knuckle couplers on every car. Complete sets as low as \$19.95! Watch 'em go... at your Lionel dealer's!

LIONEL TRAINS WITH MAGNE-TRACTION



LIONEL TRAINS, Post Office Box 9, Dept. AA
New York 46, N. Y.

I enclose 25¢. Please send me special Lionel
Train catalog offer, postage prepaid.

1. The new 44-page full-color Lionel catalog.
2. The new 5 1/2" double-faced record of whistles, bells, railroad sound effects and Diesel horns.*
3. Lionel's special "Pop Persuader."

Name _____
Address _____
City _____ Zone _____ State _____



... the HOBBYIST'S SUPERMARKET of SUPER SAVINGS!



NOWHERE IN THE WORLD
will you find as large a selection of
AIRPLANES • ENGINES • SPEEDBOATS
RACE CARS • ACCESSORIES • ETC.
CHECK THIS LIST!

AIRPLANES

FREE-FLIGHT PLANES

Amigo 42" A-B	4.95
Amigo 42" B-C	4.95
Amigo 42" C-D	4.95
Amigo 42" D-E	4.95
Amigo 42" E-F	4.95
Amigo 42" F-G	4.95
Amigo 42" G-H	4.95
Amigo 42" H-I	4.95
Amigo 42" I-J	4.95
Amigo 42" J-K	4.95
Amigo 42" K-L	4.95
Amigo 42" L-M	4.95
Amigo 42" M-N	4.95
Amigo 42" N-O	4.95
Amigo 42" O-P	4.95
Amigo 42" P-Q	4.95
Amigo 42" Q-R	4.95
Amigo 42" R-S	4.95
Amigo 42" S-T	4.95
Amigo 42" T-U	4.95
Amigo 42" U-V	4.95
Amigo 42" V-W	4.95
Amigo 42" W-X	4.95
Amigo 42" X-Y	4.95
Amigo 42" Y-Z	4.95

Buried in This Ad
are most of the new
items. Sometimes there
isn't time or space to
list all of them. But, if
available anywhere, we
have it.

Lockheed Starfire 23" Jet	2.49
Lockheed Starfire 23" C.D.	2.49
Lockheed Starfire 23" B.C.	2.49
Lockheed Starfire 23" A-B	2.49
Lockheed Starfire 23" D-E	2.49
Lockheed Starfire 23" F-G	2.49
Lockheed Starfire 23" H-I	2.49
Lockheed Starfire 23" J-K	2.49
Lockheed Starfire 23" L-M	2.49
Lockheed Starfire 23" N-O	2.49
Lockheed Starfire 23" P-Q	2.49
Lockheed Starfire 23" R-S	2.49
Lockheed Starfire 23" T-U	2.49
Lockheed Starfire 23" V-W	2.49
Lockheed Starfire 23" X-Y	2.49
Lockheed Starfire 23" Z	2.49

CLOSEOUT SPECIALS

Diamond Demon 48" B, Res. 2.95	1.50
Jetman 48" B, Res. 3.95	1.50
Jetman 48" C, Res. 4.95	1.50
Jetman 48" D, Res. 5.95	1.50
Jetman 48" E, Res. 6.95	1.50
Jetman 48" F, Res. 7.95	1.50
Jetman 48" G, Res. 8.95	1.50
Jetman 48" H, Res. 9.95	1.50
Jetman 48" I, Res. 10.95	1.50
Jetman 48" J, Res. 11.95	1.50
Jetman 48" K, Res. 12.95	1.50
Jetman 48" L, Res. 13.95	1.50
Jetman 48" M, Res. 14.95	1.50
Jetman 48" N, Res. 15.95	1.50
Jetman 48" O, Res. 16.95	1.50
Jetman 48" P, Res. 17.95	1.50
Jetman 48" Q, Res. 18.95	1.50
Jetman 48" R, Res. 19.95	1.50
Jetman 48" S, Res. 20.95	1.50
Jetman 48" T, Res. 21.95	1.50
Jetman 48" U, Res. 22.95	1.50
Jetman 48" V, Res. 23.95	1.50
Jetman 48" W, Res. 24.95	1.50
Jetman 48" X, Res. 25.95	1.50
Jetman 48" Y, Res. 26.95	1.50
Jetman 48" Z, Res. 27.95	1.50

RADIO CONTROL PLANES

Helioplane 30" A-B	3.95
Helioplane 30" C-D	3.95
Helioplane 30" E-F	3.95
Helioplane 30" G-H	3.95
Helioplane 30" I-J	3.95
Helioplane 30" K-L	3.95
Helioplane 30" M-N	3.95
Helioplane 30" O-P	3.95
Helioplane 30" Q-R	3.95
Helioplane 30" S-T	3.95
Helioplane 30" U-V	3.95
Helioplane 30" W-X	3.95
Helioplane 30" Y-Z	3.95

U-CONTROL PLANES

A-2 Twin 25 1/2" A-B	2.95
A-2 Twin 25 1/2" C-D	2.95
A-2 Twin 25 1/2" E-F	2.95
A-2 Twin 25 1/2" G-H	2.95
A-2 Twin 25 1/2" I-J	2.95
A-2 Twin 25 1/2" K-L	2.95
A-2 Twin 25 1/2" M-N	2.95
A-2 Twin 25 1/2" O-P	2.95
A-2 Twin 25 1/2" Q-R	2.95
A-2 Twin 25 1/2" S-T	2.95
A-2 Twin 25 1/2" U-V	2.95
A-2 Twin 25 1/2" W-X	2.95
A-2 Twin 25 1/2" Y-Z	2.95

BANTAM 199 ENGINE

This is the original Bantam engine that sold
for \$16.50. Brand-new and unconditionally
guaranteed.

The manufacturer of a well-known engine, after selling 30,000 at \$9.95 has
decided to get out of production. We made a special purchase of his remain-
ing 1,000 complete sets of finished and unfinished CASTINGS and PARTS:
cylinder, piston, piston pin, connecting rod, needle valve, gas line, timing
rod, crank shaft, crank case, cam, etc., including screws, gaskets, nuts, etc.
You get a complete set, except spark plug and lead. An interesting souvenir
of a model engine is the raw for your own desk.

No. J9... \$1.00 per COMPLETE SET

Just look what you get: 1-3/8" AMA decal, 62 black
decals (2 complete sets of numbers plus alphabet and
extra letters), 1 set of 4 star & bar 2", 6 picture decal
2" x 4", 3 sheets of solid colors, 1 sheet checkerboard
decals, 6 strips of solid color, plus Tips and Hints on use
of decals. A REAL BARGAIN... WORTH MANY \$\$\$\$.

READY-TO-FLY PLANES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

ENGINES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

GLO ENGINES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

SPECIAL BONUS OFFERS

BONUS ITEMS
of extra cost with every
FREE GAS ENGINE

BONUS ITEMS
of extra charge with every
FREE GAS PLANE

Bonus items include: Correct Size Propeller, Glo
Engine Handbook, Mounting Nuts and Bolts, etc.
FREE of extra cost.

WE MATCH ANY OFFER
AHC matches any offer made by any other advertiser. Attach ANY ad
in this issue to your order — and take advantage of the AHC "EXTRAS."

ORDER NOW! — Get all these AHC "EXTRAS"

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

LOOK! Only AHC Gives You All These Terrific EXTRAS

1. One year subscriptions to Model Airplane News, Air Trails and
Flying Models or their equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. BONUS ITEMS with every engine purchased! ITEMS INCLUDE:
Correct Size Propeller, Glo Engine Handbook, etc., etc.
4. BONUS with gas planes (selling at over \$1.50)
Construction Manual, Rubber Wheels, Insigants, etc.
5. No postage or packing charges for orders of over \$1.00 (include
25c if order is under \$1.00). We insure safe delivery ANYWHERE
IN THE WORLD, Outside of U.S.A. (except APO & FPO) add
10% for postage (minimum \$5.00).

SATISFACTION GUARANTEED OR YOUR MONEY BACK

ACCESSORIES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

METAL GAS TANKS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

WHEELS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

MISCELLANEOUS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

U-C ACCESSORIES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

RADIO CONTROL

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

PROPELLERS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

ENGINE TRADE-IN SERVICE

While America's Hobby Center, Inc. does not sell used engines, we have a constant request from
schools, clubs and overseas soldiers for second-hand engines for experimental work. If you have a
used engine, we will be glad to accept it in trade for any merchandise (motors, planes, boats,
accessories, etc.) except flying outfits and a few other exceptions. Listed in our ads or catalog.
Just send in your engine (with name and address) at the following schedule indicates:

Year old	7.50	10.00	15.00	20.00
Engine PLUS	22.50	25.00	30.00	

We will match any offer in this magazine. Just enclose their ad.
You will receive the usual free premiums, subscriptions, etc.
ENGINE PARTS! EVERY PART for EVERY ENGINE listed on these pages is **IN STOCK** at
America's Hobby Center. Send today for the parts you need to keep your engine in flying condition.

HOW TO ORDER

Send payment in full. No stamps, no C.O.D.'s.
Address your order to us at the branch office nearest to you:
Dept. T-114 156 West 25th St., New York 1, New York
Dept. T-114 55 E. Washington St., Chicago 2, Illinois
Dept. T-114 Room 230, 742 Market St., San Francisco 2, Cal.

READ THIS ENTIRE MAGAZINE FROM COVER TO COVER

EVERYTHING ADVERTISED CAN BE ORDERED FROM AHC

MEMBERSHIP IN "Modelers of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. Over 100,000 members!

7. No "minimum" orders. Any order is welcome.
8. 24-hour service. Mail addresses coast-to-coast airmail your orders to our N.Y. office for immediate shipment to you.
9. Most complete model stock in America—gas, rubber, solids, etc. If it's advertised, we can usually supply it.
10. Competent understanding of your modeling problems.
11. 128-page giant 2-color illustrated catalog FREE with every order.

WHEELS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

MISCELLANEOUS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

U-C ACCESSORIES

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

RADIO CONTROL

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95

PROPELLERS

Amigo 42" A-B	4.95
Amigo 42" C-D	4.95
Amigo 42" E-F	4.95
Amigo 42" G-H	4.95
Amigo 42" I-J	4.95
Amigo 42" K-L	4.95
Amigo 42" M-N	4.95
Amigo 42" O-P	4.95
Amigo 42" Q-R	4.95
Amigo 42" S-T	4.95
Amigo 42" U-V	4.95
Amigo 42" W-X	4.95
Amigo 42" Y-Z	4.95
Amigo 42" AA-AB	4.95
Amigo 42" AC-AD	4.95
Amigo 42" AE-AF	4.95
Amigo 42" AG-AH	4.95
Amigo 42" AI-AJ	4.95
Amigo 42" AK-AL	4.95
Amigo 42" AM-AN	4.95
Amigo 42" AO-AP	4.95
Amigo 42" AQ-AR	4.95
Amigo 42" AS-AT	4.95
Amigo 42" AU-AV	4.95
Amigo 42" AW-AX	4.95
Amigo 42" AY-AZ	4.95
Amigo 42" BA-BB	4.95
Amigo 42" BC-BD	4.95
Amigo 42" BE-BF	4.95
Amigo 42" BG-BH	4.95
Amigo 42" BI-BJ	4.95
Amigo 42" BK-BL	4.95
Amigo 42" BM-BN	4.95
Amigo 42" BO-BP	4.95
Amigo 42" BQ-BR	4.95
Amigo 42" BS-BT	4.95
Amigo 42" BU-BV	4.95
Amigo 42" BW-BX	4.95
Amigo 42" BY-BZ	4.95
Amigo 42" CA-CB	4.95
Amigo 42" CC-CD	4.95
Amigo 42" CE-CF	4.95
Amigo 42" CG-CH	4.95
Amigo 42" CI-CJ	4.95
Amigo 42" CK-CL	4.95
Amigo 42" CM-CN	4.95
Amigo 42" CO-CP	4.95
Amigo 42" CQ-CR	4.95
Amigo 42" CS-CT	4.95
Amigo 42" CU-CV	4.95
Amigo 42" CW-CX	4.95
Amigo 42" CY-CZ	4.95
Amigo 42" DA-DB	4.95
Amigo 42" DC-DD	4.95
Amigo 42" DE-DF	4.95
Amigo 42" DG-DH	4.95
Amigo 42" DI-DJ	4.95
Amigo 42" DK-DL	4.95
Amigo 42" DM-DN	4.95
Amigo 42" DO-DP	4.95
Amigo 42" DQ-DR	4.95
Amigo 42" DS-DT	4.95
Amigo 42" DU-DV	4.95
Amigo 42" DW-DX	4.95
Amigo 42" DY-DZ	4.95
Amigo 42" EA-EB	4.95
Amigo 42" EC-ED	4.95
Amigo 42" EE-EF	4.95
Amigo 42" EG-EH	4.95
Amigo 42" EI-EJ	4.95
Amigo 42" EK-EL	4.95
Amigo 42" EM-EN	4.95
Amigo 42" EO-EP	4.95
Amigo 42" EQ-ER	4.95
Amigo 42" ES-ET	4.95
Amigo 42" EU-EV	4.95
Amigo 42" EW-EX	4.95
Amigo 42" EY-EZ	4.95
Amigo 42" FA-FB	4.95
Amigo 42" FC-FD	4.95
Amigo 42" FE-FF	4.95
Amigo 42" FG-FH	4.95
Amigo 42" FI-FJ	4.95
Amigo 42" FK-FL	4.95
Amigo 42" FM-FN	4.95
Amigo 42" FO-FP	4.95
Amigo 42" FQ-FR	4.95
Amigo 42" FS-FT	4.95
Amigo 42" FU-FV	4.95
Amigo 42" FW-FX	4.95
Amigo 42" FY-FZ	4.95
Amigo 42" GA-GB	4.95
Amigo 42" GC-GD	4.95
Amigo 42" GE-GF	4.95
Amigo 42" GG-GH	4.95
Amigo 42" GI-GJ	4.95
Amigo 42" GK-GL	4.95
Amigo 42" GM-GN	4.95
Amigo 42" GO-GP	4.95
Amigo 42" GQ-GR	4.95
Amigo 42" GS-GT	4.95
Amigo 42" GU-GV	4.95
Amigo 42" GW-GX	4.95
Amigo 42" GY-GZ	4.95
Amigo 42" HA-HB	4.95
Amigo 42" HC-HD	4.95
Amigo 42" HE-HF	4.95
Amigo 42" HG-HH	4.95
Amigo 42" HI-HJ	4.95
Amigo 42" HK-HL	4.95
Amigo 42" HM-HN	4.95
Amigo 42" HO-HP	4.95
Amigo 42" HQ-HR	4.95
Amigo 42" HS-HT	4.95
Amigo 42" HU-HV	4.95
Amigo 42" HW-HX	4.95
Amigo 42" HY-HZ	4.95
Amigo 42" IA-IB	4.95
Amigo 42" IC-ID	4.95
Amigo 42" IE-IF	4.95
Amigo 42" IG-IH	4.95
Amigo 42" II-IJ	4.95
Amigo 42" IK-IL	4.95
Amigo 42" IM-IN	4.95
Amigo 42" IO-IP	4.95
Amigo 42" IQ-IR	4.95
Amigo 42" IS-IT	4.95
Amigo 42" IU-IV	4.95
Amigo 42" IW-IX	4.95
Amigo 42" IY-IZ	4.95
Amigo 42" JA-JB	4.95
Amigo 42" JC-JD	4.95
Amigo 42" JE-JF	4.95
Amigo 42" JG-JH	4.95
Amigo 42" JI-JJ	4.95
Amigo 42" JK-JL	4.95
Amigo 42" JM-JN	4.95
Amigo 42" JO-JP	4.95
Amigo 42" JQ-JR	4.95
Amigo 42" JS-JT	4.95
Amigo 42" JU-JV	4.95
Amigo 42" JW-JX	4.95
Amigo 42" JY-JZ	4.95
Amigo 42" KA-KB	4.95
Amigo 42" KC-KD	4.95
Amigo 42" KE-KF	4.95
Amigo 42" KG-KH	4.95
Amigo 42" KI-KJ	4.95
Amigo 42" KK-KL	4.95
Amigo 42" KM-KN	4.95
Amigo 42" KO-KP	4.95
Amigo 42" KQ-KR	4.95
Amigo 42" KS-KT	4.95
Amigo 42" KU-KV	4.95
Amigo 42" KW-KX	4.95
Amigo 42" KY-KZ	4.95
Amigo 42" LA-LB	4.95
Amigo 42" LC-LD	4.95
Amigo 42" LE-LF	4.95
Amigo 42" LG-LH	4.95
Amigo 42" LI-LJ	4.95
Amigo 42" LK-LL	4.95
Amigo 42" LM-LN	4.95
Amigo 42" LO-LP	4.95
Amigo 42" LQ-LR	4.95
Amigo 42" LS-LT	4.95
Amigo 42" LU-LV	4.95
Amigo 42" LW-LX	4.95
Amigo 42" LY-LZ	4.95
Amigo 42" MA-MB	4.95
Amigo 42" MC-MD	4.95
Amigo 42" ME-MF	4.95
Amigo 42" MG-MH	4.95
Amigo 42" MI-MJ	4.95
Amigo 42" MK-ML	4.95
Amigo 42" MM-MN	4.95
Amigo 42" MO-MP	4.95
Amigo 42" MQ-MR	4.95
Amigo 42" MS-MT	4.95
Amigo 42" MU-MV	4.95
Amigo 42" MW-MX	4.95
Amigo 42" MY-MZ	4.95
Amigo 42" NA-NB	4.95
Amigo 42" NC-ND	4.95
Amigo 42" NE-NF	4.95
Amigo 42" NG-NH	4.95
Amigo 42" NI-NJ	4.95
Amigo 42" NK-NL	4.95
Amigo 42" NM-NN	4.95
Amigo 42" NO-NP	4.95
Amigo 42" NQ-NR	4.95
Amigo 42" NS-NT	4.95
Amigo 42" NU-NV	4.95
Amigo 42" NW-NX	4.95
Amigo 42" NY-NZ	4.95
Amigo 42" OA-OB	4.95
Amigo 42" OC-OD	4.95
Amigo 42" OE-OF	4.95
Amigo 42" OG-OH	4.95
Amigo 42" OI-OJ	4.95
Amigo 42" OK-OL	4.95
Amigo 42" OM-ON	4.95
Amigo 42" OO-OP	4.95
Amigo 42" OQ-OR	4.95
Amigo 42" OS-OT	4.95
Amigo 42" OU-OV	4.95
Amigo 42" OW-OW	4.95
Amigo 42" OY-OZ	4.95
Amigo 42" PA-PB	4.95
Amigo 42" PC-PD	4.95
Amigo 42" PE-PF	4.95
Amigo 42" PG-PH	4.95
Amigo 42" PI-PJ	4.95
Amigo 42" PK-PL	4.95
Amigo 42" PM-PN	4.95
Amigo 42" PO-PP	4.95
Amigo 42" PQ-PR	4.95
Amigo 42" PS-PT	4.95
Amigo 42" PU-PV	4.95
Amigo 42" PW-PX	4.95
Amigo 42" PY-PZ	4.95
Amigo 42" QA-QB	4.95
Amigo 42" QC-QD	4.95
Amigo 42" QE-QF	4.95
Amigo 42" QG-QH	4.95
Amigo 42" QI-QJ	4.95
Amigo 42" QK-QL	4.95
Amigo 42" QM-QN	4.95
Amigo 42" QO-QP	4.95
Amigo 42" QQ-QR	4.95
Amigo 42" QS-QT	4.95
Amigo 42" QU-QV	4.95
Amigo 42" QW-QX	4.95
Amigo 42" QY-QZ	4.95
Amigo 42" RA-RB	4.95
Amigo 42" RC-RD	4.95
Amigo 42" RE-RF	4.95
Amigo 42" RG-RH	4.95
Amigo 42" RI-RJ	4.95
Amigo 42" RK-RL	4.95
Amigo 42" RM-RN	4.95
Amigo 42" RO-RP	4.95
Amigo 42" RQ-RR	4.95
Amigo 42" RS-RT	4.95
Amigo 42" RU-RV	4.95
Amigo 42" RW-RX	4.95
Amigo 42" RY-RZ	4.95
Amigo 42" SA-SB	4.95
Amigo 42" SC-SD	4.95
Amigo 42" SE-SF	4.95
Amigo 42" SG-SH	4.95
Amigo 42" SI-SJ	4.95
Amigo 42" SK-SL	4.95
Amigo 42" SM-SN	4.95
Amigo 42" SO-SP	4.95
Amigo 42" SQ-SR	4.95
Amigo 42" SS-ST	4.95
Amigo 42" SU-SV	4.95
Amigo 42" SW-SX	4.95
Amigo 42" SY-SZ	4.95
Amigo 42" TA-TB	4.95
Amigo 42" TC-TD	4.95
Amigo 42" TE-TF	4.95
Amigo 42" TG-TH	4.95
Amigo 42" TI-TJ	4.95
Amigo 42" TK-TL	4.95
Amigo 42" TM-TN	4.95
Amigo 42" TO-TP	4.95
Amigo 42" TQ-TR	4.95
Amigo 42" TS-TT	4.95
Amigo 42" TU-TV	4.95
Amigo 42" TW-TX	4.95
Amigo 42" TY-TZ	4.95
Amigo 42" UA-UB	4.95
Amigo 42" UC-UD	4.95
Amigo 42" UE-UF	4.95
Amigo 42" UG-UH	4.95
Amigo 42" UI-UJ	4.95
Amigo 42" UK-UL	4.95
Amigo 42" UM-UN	4.95
Amigo 42" UO-UP	4.95
Amigo 42" UQ-UR	4.95
Amigo 42" US-UT	4.95
Amigo 42" UU-UV	4.95
Amigo 42" UW-UX	4.95
Amigo 42" UY-UZ	4.95
Amigo 42" VA-VB	4.95
Amigo 42" VC-VD	4.95
Amigo 42" VE-VF	4.95
Amigo 42" VG-VH	4.95
Amigo 42" VI-VJ	4.95
Amigo 42" VK-VL	4.95
Amigo 42" VM-VN	4.95
Amigo 42" VO-VP	4.95
Amigo 42" VQ-VR	4.95
Amigo 42" VS-VT	4.95
Amigo 42" VU-VV	4.95
Amigo 42" VW-VX	4.95
Amigo 42" VY-VZ	4.95
Amigo 42" WA-WB	4.95
Amigo 42" WC-WD	4.95
Amigo 42" WE-WF	4.95
Amigo 42" WG-WH	4.95
Amigo 42" WI-WJ	4.95
Amigo 42" WK-WL	4.95
Amigo 42" WM-WN	4.95
Amigo 42" WO-WP	4.95
Amigo 42" WQ-WR	4.95
Amigo 42" WS-WT	4.95
Amigo 42" WU-WV	4.95
Amigo 42" WW-WX	4.95
Amigo 42" WY-WZ	4.95
Amigo 42" XA-XB	4.95
Amigo 42" XC-XD	4.95
Amigo 42" XE-XF	4.95
Amigo 42" XG-XH	4.95
Amigo 42" XI-XJ	4.95
Amigo 42" XK-XL	4.95
Amigo 42" XM-XN	4.95
Amigo 42" XO-XP	4.95
Amigo 42" XQ-XR	4.95
Amigo 42" XS-XT	4.95
Amigo 42" XU-XV	4.95
Amigo 42" XW-XX	4.95
Amigo 42" XY-XZ	4.95
Amigo 42" YA-YB	4.95
Amigo 42" YC-YD	4.95
Amigo 42" YE-YF	4.95
Amigo 42" YG-YH	4.95
Amigo 42" YI-YJ	4.95
Amigo 42" YK-YL	4.95
Amigo 42" YM-YN	4.95
Amigo 42" YO-YP	4.95
Amigo 42" YQ-YR	4.95
Amigo 42" YS-YT	4.95
Amigo 42" YU-YV	4.95
Amigo 42" YW-YX	4.95
Amigo 42" YY-YZ	4.95
Amigo 42" ZA-ZB	4.95
Amigo 42" ZC-ZD	4.95
Amigo 42" ZE-ZF	4.95
Amigo 42" ZG-ZH	4.95
Amigo 42" ZI-ZJ	4.95
Amigo 42" ZK-ZL	4.95
Amigo 42" ZM-ZN	4.95
Amigo 42" ZO-ZP	4.95
Amigo 42" ZQ-ZR	4.95
Amigo 42" ZS-ZT	4.95
Amigo 42" ZU-ZV	4.95
Amigo 42" ZW-ZX	4.95
Amigo 42" ZY-ZZ	4.95

REAL FLYING SAUCERS

WITH GYROSCOPIC ACTION!
STABILIZING RING!
INERTIA LAUNCHER!

- Developed and perfected in California after hundreds of test flights. Flies horizontally and vertically in free flight. Requires no engine.

Complete Construction KIT and INSTRUCTIONS **\$2.95**

- FREE DELIVERY on Prepaid Orders.
- Customary Discounts to Jobbers and Dealers

SPACE CRAFT Largest in the West
1244 S. Grand Ave. Los Angeles (15-A), Calif.



**The BIGGEST BUY . . . BY COMPARISON
In Profile Model Airplanes**

- Big 40" Wing Span
- Highest Quality Materials
- All Pre-fabricated Parts
- For Engines .19 to .35 Disp.
- 3-Dimensional Picture Plans
- Complete U-Control System

HENRY ENGINEERING CO.

BURBANK

CALIFORNIA

The Readers Write

Let's hear from you! Address all letters
to Air Trails HOBBIES For Young Men,
304 E. 45th St., New York 17, N. Y.

More Dope on Draftsmen . . . I am very much interested in becoming a draftsman, especially in the aircraft field. Although I will be 16 this September and a junior in High School, I would like to plan my future. My greatest problem is that I have no hearing, I lost it when I was 3 years old. Since our High School does not have mechanical drawing, I rely upon books for any information I can to help me understand the fundamentals, but I would be more satisfied and grateful if you would volunteer any information that would be of value.

Bruce Wydalitis, McAdoo, Pa.

• Your choice of a career as draftsman sounds excellent. In the October and November issues of "ATH" we will have a two-part article entitled "How to Become a Trained Technician" that includes information on this subject. In a forthcoming issue we will have an article on technical illustration. You may be interested in obtaining the following pamphlets: "Consider Mechanical Drafting," free from the Connecticut State Department of Education, Bureau of Vocational Education, Division of Instruction, Hartford, Conn.; "Mechanical Drafting and Design," an occupational monograph that costs 32 cents and may be had by writing to Morgan-Dillon & Co., Chicago, Ill.

The Happiest Hobbyist . . . I want to thank you for what you have been doing. I quit buying model airplane books because they did not include other hobbies that are of interest to all. Then you came out with this new mag. I thumbed through one, finally took it. By the time I got home I was the happiest hobbyist alive. Your mag was custom made for me. It has everything plus.

John Patterson, Warrington, Fla.

Info on Firearms . . . I am very interested in rifles and other weapons used in WW II. I would like to know if you can tell me where I could get information, pictures and if possible scale drawings of rifles, pistols, machine guns and other WW II weapons.

• For listing of books about firearms contact: J. F. Baenteli, 53 Borton Avenue, Akron 2, Ohio.

Boat Design . . . I wish to give you a suggestion about your magazine. I would like to have you run a contest about the designing of boats.

Todd Ellison, La Crescenta, Calif.

• How do you like pg. 27, T. E.?

Statement of the Ownership, Management, and Circulation required by Act of Congress of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233), of Air Trails HOBBIES For Young Men, published monthly at New York, N. Y., for October 1, 1954.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Street & Smith Publications, Inc., 575 Madison Ave., New York 22, N. Y.; editor, Albert L. Lewis, 575 Madison Ave., New York 22, N. Y.; managing editor, none; business manager, none.

2. The owner is: Street & Smith Publications, Inc., 575 Madison Ave., New York 22, N. Y., a corporation owned through stock holdings by Gerald H. Smith, 575 Madison Ave., New York 22, N. Y.; Ormond V. Gould, 575 Madison Ave., New York 22, N. Y.

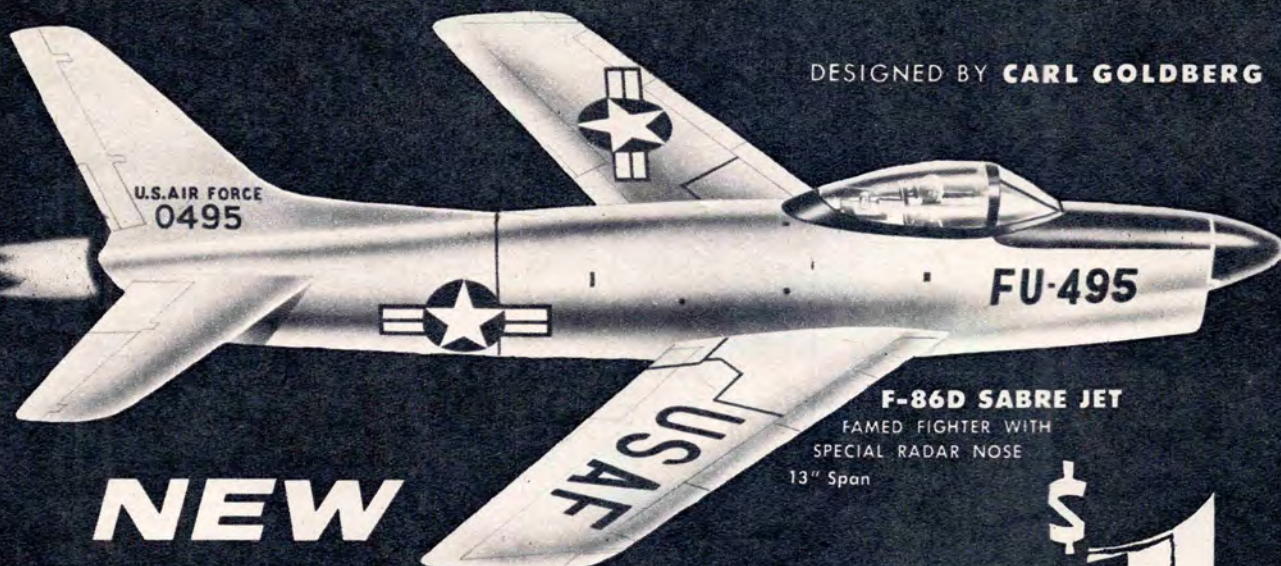
3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

ARTHUR P. LAWLER, Vice President
Of Street & Smith Publications, Inc.,
publishers.

Sworn to and subscribed before me this 30th day of September, 1954, Edward F. Kasmir, Notary Public No. 60-2039700, New York County. (My commission expires March 30, 1955.)

DESIGNED BY **CARL GOLDBERG**



F-86D SABRE JET

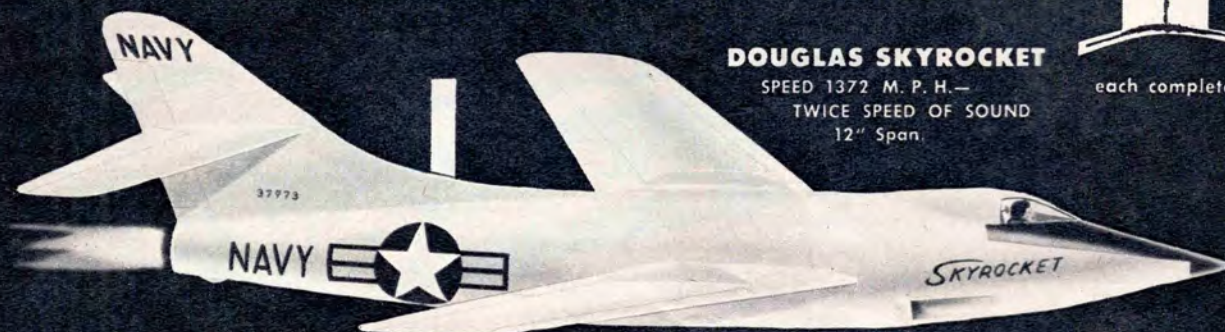
FAMED FIGHTER WITH
SPECIAL RADAR NOSE
13" Span

NEW

**BE FIRST TO ASSEMBLE THESE REALISTIC FLYING MODELS
WITH SUPERFORM BALSA FUSELAGE SHELLS AND PLASTIC PARTS!
THEY HAVE SOLID MODEL BEAUTY—FLYING MODEL THRILL!**



each complete



DOUGLAS SKYROCKET

SPEED 1372 M. P. H.—
TWICE SPEED OF SOUND
12" Span

Build the most beautiful flying scale model ever, in a jiffy! Top Flite Superform balsa fuselage shells are die-cut for exact fit... then magically and permanently pre-formed to actual rounded contours!

MANY MOLDED PLASTIC PARTS, rubber wheels, and colorful decals let you finish your model with exciting realistic detail. No special tools needed! Comic-book style plans picture every step for easiest assembly. Best of all, Top Flite Models are guaranteed to fly!

These are JIGTIME FLYING MODELS for **JETEX** and **CATAPULT!**

If no dealer near you, order from

TOP FLITE MODELS, INC.
2637 S. Wabash, Chicago 16, Ill.

To cover packing and postage charges, send \$1.25 for 1 model or \$2.35 for 2 models.

**LOOK AT THIS EXPLODED VIEW OF
TYPICAL SUPERFORM MODEL.
GOES TOGETHER LIKE MAGIC!**



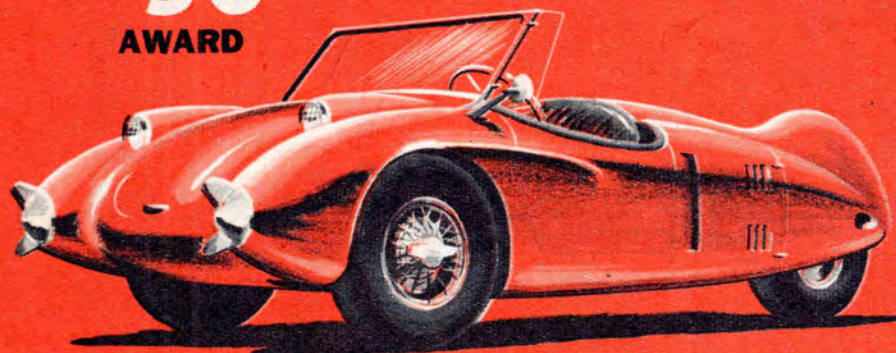
as advertised in
LIFE

TOP FLITE

AT ALL BETTER MODEL and HOBBY STORES

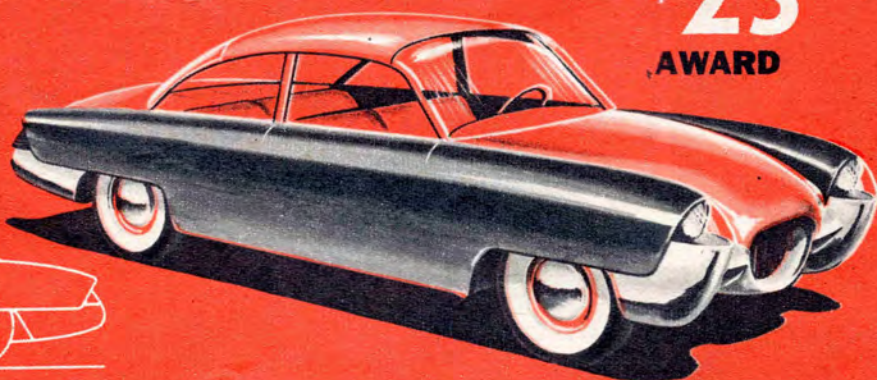
AUTO DESIGN COMPETITION

FIRST
\$50
AWARD

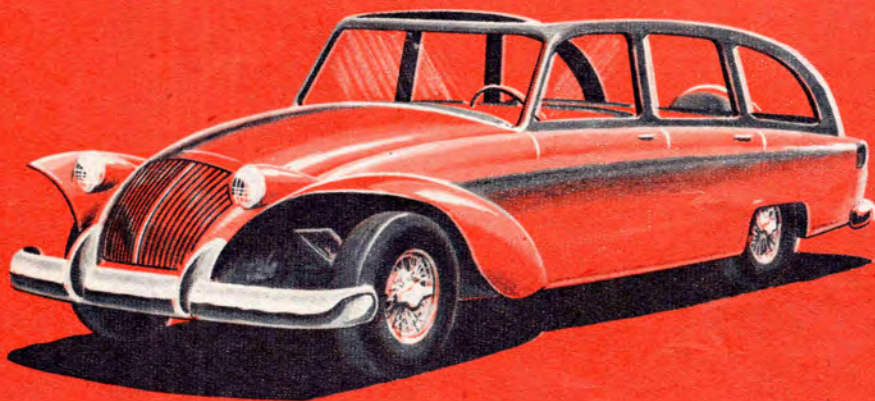
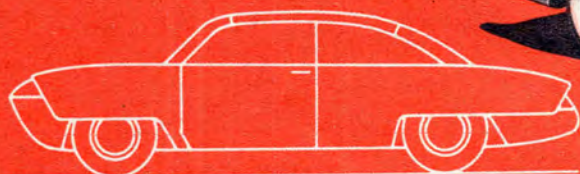


Shown on this month's cover, this interesting little three-wheeler sports car is design of Perry Minton of Pasadena, Calif. Powered by a four-cylinder 40 hp engine located in rear which drives the back wheel through conventional three-speed transmission with over-drive in third. Light in weight, the car has an acceleration comparable to Chevrolet's.

Six-passenger sedan by George Angersbach of Indianapolis, Ind. Powered by V-8 or 6-cylinder ohv engine, the car can be produced in either two- or four-door model. Large area of tinted glass gives good all-around visibility. The front features a bumper-grille combination pressed from bumper material. To hold die costs to minimum, body lines are simple. Headlights flare into fenders.



SECOND
\$25
AWARD



Convertible station wagon by Leonard E. Opdycke of Milton, Mass. Car is somewhat similar to Nash Rambler except that it has a full station wagon body with four-foot-wide tailgate. Roof is a roll-back canvas which can be stopped at any point leaving an opening over the front seat. Capacity: six in three seats. Center seat folds into floor, the rear one is removable. Engine flat-four, 120 hp.



THIRD
\$10
AWARD

It's easy to enter—
All types are eligible:
restyled passenger cars,
original sport jobs, hot
rods, or military types.

AWARDS OF \$50.00—\$25.00—\$10.00 EVERY ISSUE

Cash awards will be made each issue for the three most significant auto designs submitted to this magazine. \$50 will go to the top design, \$25 to the second and \$10 to the third. You may submit sketches for an original design auto, for a restyled car, for sportscars, family sedans, record cars, hot rods, military vehicles or unusual trucks. Include side, front, rear and top drawings, plus sketches of the proposed vehicle from three-quarter front and three-quarter rear positions. Sorry, we cannot enter into any correspondence about this contest. Send entries to Auto Design, c/o Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

27 NATIONAL CHAMPIONSHIPS!



Out of a Possible 50
Won by Modelers Using

CHEMINOL'S
Ohlsson & Rice

glow plugs and detergent fuels!

**1954
NATIONALS**
CONTROL and
FREE FLIGHT
CHAMPIONS

Hellz Fyre Speed Fuel

**1954
WORLD'S
SPEED
RECORD**



and Kwik Start
Glow Plugs

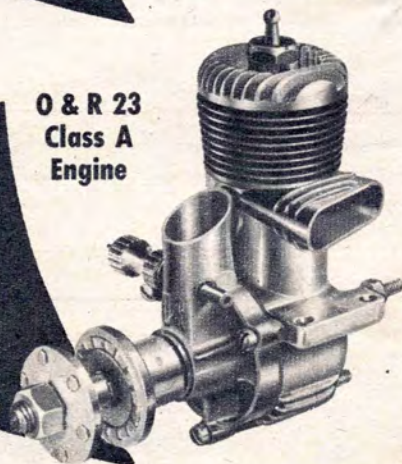


FLY LIKE A CHAMPION —Use Cheminol's Ohlsson & Rice Products. Profit now from the overwhelming superiority proven at the 1954 Nationals by Cheminol Products—you'll get cleaner, faster, smoother-running, championship engine performance with New Cheminized Detergent Fuels! You, too, can get fast-starting, positive ignition with Ohlsson & Rice Kwik Start Glow Plugs! For peak performance in competition, use Hellz Fyre Speed Fuel—and for consistent trophy-taking power, choose the dependable National Class A winner—Ohlsson & Rice 23 Engine!

CLASS A SENIOR SPEED EVENT won by Walter Vrablic, of Perth Amboy, N.J., another Ohlsson & Rice champion—who beat the old record of 119.63 mph with a sizzling 126.71 mph—a tremendous advance in model speed! Cheminol's Hellz Fyre—fastest fuel yet developed—and Kwik Start Glow Plugs, Cheminol's new approach to the glow plug problem, made a winning combination for Vrablic!

ANOTHER OHLSSON & RICE CHAMPION—the unsurpassed O & R 23 Engine has done it again! This great little National Champion is packed with power, stamina, and reliability. Constantly improved and acclaimed by thousands of modelers as their favorite Class A engine, the O & R 23 again won out over all comers!

**O & R 23
Class A
Engine**



**1954
FREE
FLIGHT
OPEN**

Cheminol Corporation

9307 East Bermudez St., Rivera, Calif. • In Canada, Canadian Hobbycraft, Toronto
Eastern Factory and Warehouse: 410 N. Cass St., Middletown, Dela.

*Can I Afford
Specialized Education?*

**YES!
YOU
CAN**



**AT
NORTHROP AERONAUTICAL
INSTITUTE, because
WE HELP YOU**

- by low tuition cost
- by easy pay-as-you-learn plan
- by intensive training which shortens the time spent in school
- by assisting you to secure part-time employment at good wages
- by assisting you to secure permanent employment after graduation

NOTE: The Demand for Northrop Graduates exceeds the supply.

**You can't afford to settle for less than a
Successful Career in Aviation for which the
following Northrop Courses prepare you:**

AERONAUTICAL ENGINEERING TECHNOLOGY—
Internationally recognized Engineering Training.

AIRCRAFT MAINTENANCE ENGINEERING TECHNOLOGY—
Combining features of Engineering and Maintenance Courses.

MASTER AIRCRAFT AND ENGINE MECHANIC —
Leads to A & E Certificate of C.A.A.

JET ENGINE OVERHAUL AND MAINTENANCE —
Jet engine training has now become a specialty.

Fill in and mail coupon below for **FREE CATALOG.**
Do it now. No obligation.

**ATTENTION
KOREA
VETERANS**

Northrop Aeronautical Institute is
fully approved for your training
and for all other veteran training.



Northrop
Aeronautical Institute

An Accredited Technical Institute
1133 W. Arbor Vitae Street
Inglewood 1, California

MAIL COUPON FOR FULL INFORMATION

NORTHROP AERONAUTICAL INSTITUTE 8N17
1133 W. Arbor Vitae Street, Inglewood 1, California

Please send me immediately the Northrop catalog, employment
data, and schedule of class starting dates. I am interested in:

- ☐ Aeronautical Engineering Technology
☐ Aircraft Maintenance Engineering Technology
☐ Master Aircraft and Engine Mechanic
☐ Jet Engine Overhaul and Maintenance

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

Veterans: Check here ☐ for Special Veteran Training Information.

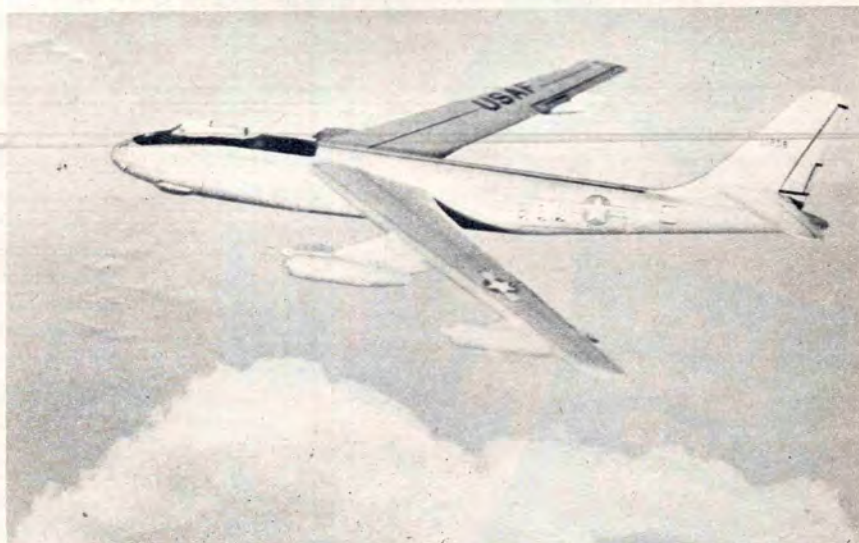
REALISM-IN-MODELS PHOTO CONTEST

AIRPLANE WINNERS

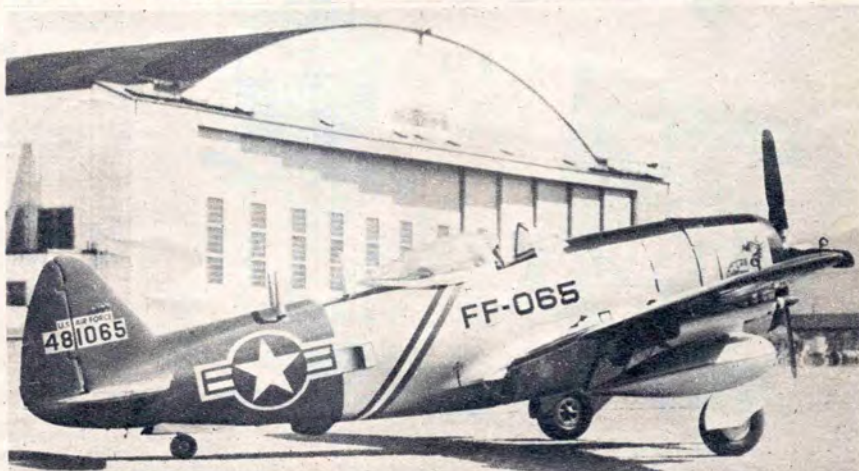
Third in series of "like real" photo contests produced outstanding entries. Previous sections were for model subs and vehicles. Prize-winning model boat photographs will be presented in the next issue—plus news of additional photo prizes—so start polishing the lens!



First place (and \$50!) goes to ex-Air Forceman Richard Blake, W. Lynn, Mass., for a shot of his completely equipped miniature air base. All planes are from kits with added detail.



Richard Niemiec, Carrollton, Ohio, takes 2nd (\$25) with pose of Strombeck-Becker Boeing B-47 Stratojet bomber model against background of clouds (hanging wires retouched out).



Major Pelham Burnett's F-47 (from Miniature Co. kit) has won 15 first places. Speed Graphic C-6 camera, Kodak XX, F-32 @ 1/100 sec. Model on ramp 300 ft. from an actual hangar.

AQUA-tivities



■ We have been gratified to hear from many readers who have built some of the small boats from plans shown in ATH and who have had good results. For example, Joe Archer (3314 Center St., Orlando, Fla.) sent in pix of both "Obie" and "Skidding II"—the shots were not quite sharp enough to reproduce—and says both are fine performers, with the latter quite fast.

Another "Obie" enthusiast is Ralph Trotter (36 Elizabeth Dr., Providence, R. I.). Ralph couldn't get the mahogany veneer called for on the plans, but followed them closely otherwise. His pictures were not of top grade, a matter Ralph mentioned in his letter, and attributable to the fact that they were taken, developed and enlarged by an amateur photographer—himself! Anyway, we are glad to hear of his good results with "Obie;" the boat has been driven by an outboard motor owned by his 11-year-old cousin; Ralph himself is 15.

A suggestion that we run scale plans of some of the full-size inboard and outboard racing craft has been made by Major Morris A. Hale, U.S.A.F. (5005 23rd St., South Arlington, Va.), who sent several sketches of some models he expects to build, and which closely follow the lines of some of the big racers.

Since he has been active in Utility Outboard racing, he has a good idea of

what can be done in the line of reducing such boats to model dimensions, and we hope he will let us know how his new miniature speedsters pan out.

Contest and Club News. Results of two races have been received from Bob Graham (127 Cottage St., Jersey City, 6, N. J.). There were 20 entries at the Baltimore race, with representatives from New York and Philadelphia attending. High point of the day was the setting of a new World Record in Class C—over 10 c.c., but under 15 c.c.—by Walter MacWilliams of Philly. He broke his own previous record of 75 mph, by clocking 81.45 mph, with an oversize Dooling engine in a Traband-designed hull.

Winners in the various classes were: A (over 30 c.c.)—1. Max Biederman, 52.82 mph; 2. Ben Kaufman; 3. Joe Sparr. Class B (30 c.c.)—1. Max Biederman, 69.23 mph; 2. Henry Parohl; 3. Walt MacWilliams. Class C (15 c.c.)—1. (see above); 2. Bob Graham. Class D (modified 10 c.c.)—1. Bob Graham, 69.23 mph; 2. Ray Seavey, who had a hot battle with Bob for top place, with only .99 mph separating the 3-heat totals of the two; 3. Fred Manderville. Class E (stock 10 c.c.)—1. Fred Manderville, 64.29; 2. Bob Deroo; 3. Bob Graham. (Continued on page 75)

Gene Newman and his 42-inch cruiser (top of page). Craft seen in action below; scaled 1 inch to the foot; power is a Thomas electric motor with gear reduction. Beam is 10 in. Radio receiver used is the MacNabb 465. Marker buoys for the course are balloons.



BUILD A REAL SCALE SOLID MODEL AIRPLANE



Here are real scale models worthy of the name, not a few pieces of plastic that stick together in 5 minutes and look like a dime store toy. Fully carved fuselage, shaped wings and empennage—jampacked with metal castings—every item that can be reproduced—is given to you.

F8F Bearcat	2.75	P-51 Mustang	2.75
F4U Corsair	2.75	P9F Panther	2.75
P9F Cougar	2.75	F-86 Sabrejet	2.75
FW-190 Focke Wulf	2.75	F-80 Shooting Star	2.75
P6F Hellcat	2.75	British Spitfire	2.75
P-38 Lightning	3.50	P-47 Thunderbolt	2.95
ME-109 Messerschmitt	2.75	F-84 Thunderjet	2.75
MIG-15	2.75	F-82 Twin Mustang	3.50
		P-40 Warhawk	2.75

17' INBOARD CHRIS-CRAFT SPORTSMAN

\$4 95



One inch scale. Here is a flashy, fast and rugged inboard, super de luxe in appointments. Easy to build, with completely carved hull, die cut mahogany deck and plastic windshield. 26 beautiful metal fittings: windshield brackets, steering wheel, clutch handle, stern light, boat hook, fire extinguisher, propeller shaft, stuffing box, step plates, hoisting rings and working anchor. All you need is your engine and fly wheel.

LAYTON SKIFF

\$1 95



Here is a big, inexpensive skiff designed for the electric or 1/2 A engines, easy to assemble, complete to the oars. Length 17", Beam 7", Freeboard 3". Die cut Balsa construction. Eleven metal fittings including oar lock sockets, oar locks, cleats, chocks, anchor and fire extinguisher.

OUTBOARD RUNABOUT **\$3 95**



16 Foot DeLuxe Outboard Runabout designed expressly for the new 1/2 A outboard engines! 16 inches by 6, fully carved and shaped. No other scale kit has ever been so easy to put together, SO PERFECT IN OPERATION. Detail Galore . . . Chocks, cleats, bow and stern running lights, boat hook, oar locks, fire extinguisher, working navy anchor—15 beautiful metal castings of the kind Dyna-model is famous for.

If no local dealer is convenient, mail orders will be filled. Please include 25¢ for packing and postage. No C.O.D.'s.

DYNA-MODEL PRODUCTS COMPANY
76 SOUTH STREET, OYSTER BAY, NEW YORK

Everything Under Control

News, Views, Comment on
Radio Control Planes, Boats,
Vehicles by Howard McEntee



R/C at National Meet: Danny Mass of Long Island City, N. Y., uses Schmidt 5-channel rig for elevator-rudder control. Power is Cyclone fitted with hi-compression head; 7' span.

■ If there is no other lesson to be taken from the R/C event at the National Modelplane Contest, it is that the boys have had enough experience now in flying with multi-control—and especially with elevator—to make it an almost foregone conclusion that a good multi man will beat a good rudder-only man every time. This idea came up at the 1952 Nats, but many pointed out that that meet was held on the West Coast, right in the midst of hot multi-control territory. Last year the rudder boys came back with a bang to take most of the top places, but in 1954—well, of the first 14 placers only two had plain rudder control, the highest of these being Tony Grish in 7th. And only one of the others flew without elevators. The conclusions are obvious, and it appears that at long last the time is here when the rules will have to be amended to provide for the simple and the multi-control classes of planes.

As for the meet itself, things were a bit hectic; there were only four official

days of flying, and since the entry list was bigger than ever before, there were some pretty long waits, especially for the 27¼ flyers. Then too, flying on two days had to be stopped at 2:30 p.m. for the Air Show; a few spots of bad weather, plus quite a bit of interference trouble added to the complications. The weather we can do little about, but the interference is another matter. Much of it took the form of fleeting signals that were hard to run down—and doubtless came from contestants who had just had to make those last-minute little tests, despite pleas of the officials that all transmitters be kept turned off. Portable interference locators were on hand and were put to almost constant use. Several successive spin-ins early on the first day were traced to radar equipment on the Base, and the Navy was most cooperative in having this shut down as quickly as possible. Interference from diathermy and industrial heating equipment was also suspected; many of the R/C men are com-

ing to the conclusion that a large R/C meet (or any R/C meet, for that matter) should not be run off anywhere near a large city—and preferably not on a Service field, where there is all sorts of electronic equipment in constant use.

The R/C event was supposed to have been held—at least for the first two days—at a small private airfield about 10 miles north of the Glenview base, but it had no paved runways. This raised protests from the boys who expected to pick up points with R.O.G.s and prototype takeoffs, so R/C Director Ernie Kratzet pulled plenty of strings with the result that R/C was located at Glenview for the entire meet. Incidentally, we feel that Ernie and his co-worker Red Hillegas, and their entire crew of helpers did a first-rate job, in spite of the problems they had to contend with.

Needless to say, the flying was of a high caliber, though the general impression was that it didn't top that seen at Willow Grove in 1953 by such a wide margin as might have been expected. We saw some first-rate upside-down flight, perfect outside loops, true spins (not just variations of a spiral dive), etc. We were a bit disappointed to find that there were very few original design planes among those actually flying in the competition; there were quite a few ingenious new control systems, though, so it appears that many of the best flyers have been concentrating on learning how to handle their control systems, and have had to fit this equipment into kit planes, to save time.

We'll have a complete and detailed report on the Nats R/C event in the Air Trails Model annual, including a listing of the planes and equipment of most of those who had planes at Glenview. However, here is a brief rundown of the top 10 winners: 1. Alex Schneider (San Francisco), modified 7' Cub, Rockwood 5-reed equipment, 183 points. 2. Howard Bonner (Los Angeles), Beam, own 2 audio channel receiver, 146. 3. George Swank (Buffalo), Super Buccaneer, Schmidt 5-reed equipment, 117. 4. Colby Evett (Los Angeles), own shoulder wing plane, own audio selection receiver, 110. 5. Phil D'Ostilio (Fairfield, Conn.), 5' span original, twin 50 mc. RF channels with RK61 receivers, 109. 6. William Stelmach (Menlo Park, Calif.), modified 7' TD Coupe, Rockwood 5-reed equipment, 102. 7. Tony Grish (St. John, Ind.), Live Wire Cruiser, Citizen-Ship 465 equipment, 101. 8. Harold deBolt (Williamsville, N.Y.), 55" span original design, Schmidt 5-reed equipment, 101. 9. Frank Madl (Chicago), modified Custom Cavalier, Rockwood 5-reed equipment, 99. 10. Leo Galinski (Chicago), 7' plane, own reed equipment, 98. All above flyers had RME except Grish, who flew with rudder only.

Clubs and Contests. Annual National Capitol Meet held at Andrews AFB, near Washington, D.C., was again dogged by bad weather (15-24 mph wind all day, with gusts to 35!) but this year interference was non-existent. Constant monitoring kept track of latter. Top placers were: 1. Helmut Kuehnell (Hampton, Va.), original plane with prop. rudder and elev. 2. (Continued on page 78)

R/C at National Meet: After years of participating with super-size craft, Charles H. Siegfried, Wichita, Kans., entered modified Livewire Sr.; R-M-E control, original receiver.





DMECO MODELS

"AMERICA'S FINEST"

5 →

GOOD REASONS WHY THEY ARE BEST!

HARDWARE...

Dural Gear!
Nuts & Bolts!
Screws!
Covering!
Wire!
Decals!
In most kits...

DRAWINGS...

All the parts are shown full size!
Complete Assembly views and instructions!
Engine installations and Test proven accessories listed!

MATERIALS...

Premium selected Grade A/I balsa is used!
All hardwood parts are tough seasoned maple!
Plywood is 1st grade all proof Aircraft quality!

REDI-MADE...

All parts are precision finished to close tolerances using DIE-CUTTING, CARVING and SHAPING to the best advantage!

DESIGN...

The design is right for the job to be done!
Only after months of vigorous, all out field testing is it offered to you! — and they are exclusive tool!



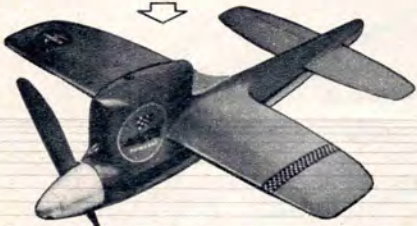
1. COMPLETE HARDWARE!
2. GIANT FULL SIZE PLANS!
3. FINEST GRADE A/I BALSA!
4. PRECISELY PRE-FABRICATED!
5. DESIGN-ENGINEERED & FULLY TESTED!

"FLY BETTER WITH DMECO"

DMECO MODELS FOR FUN AND PLEASURE

"SPEEDWAGONS"

FOR CLASS "A" THE "20" \$3.95
FOR CLASS "B" THE "29" \$4.95
FOR CLASS "D" THE "50" \$5.95



"SPEEDSTER"
1/2A TEAM RACING
A REALLY FINE DMECO KIT... \$2.95

"New BIPE"
FOR SPORT & STUNT TRAINING.....\$3.95



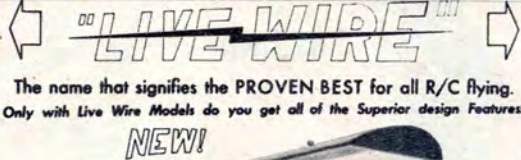
"SPORTWING"
A REAL COMBAT FLYER.....\$3.95

THE VERY FINEST FOR RADIO CONTROL



\$6.95

THE "TRAINER" .08-15 ENG
THE WORLD'S MOST POPULAR R/C MODEL!



The name that signifies the PROVEN BEST for all R/C flying.
Only with Live Wire Models do you get all of the Superior design Features!



\$14.95



\$2.95

THE "CLIPPER"



\$14.95

THE "SENIOR" .19-23 ENG. CUSTOM BUILT

"LIVE WIRE" "Cruiser"
dmeCO'S NEW REALISTIC RADIO CONTROL MODEL!

Typical of the Live Wire models is the Cruiser. Its well balanced design provides extremely realistic flight with fine speed characteristics and great weight carrying ability. Construction is simple and rugged. Included is the removable R/C unit. Live Wire kits are complete with finest A/I materials, precision finished ready for assembly. Plans are full size and include instructions for building, radio installation and flying. All necessary hardware is given including R/C ballistics and home.

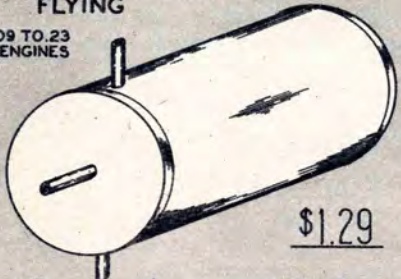


THE "KITTEN" R/C

FOR THE BEST R/C FLYING ——— ACCESSORIES APPROVED BY THE EXPERTS!

R/C AND CONTROL LINE FLYING

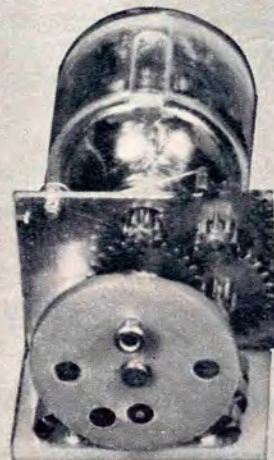
.09 TO .23 ENGINES



\$1.29

Positive Flow FUEL TANK

THE TANK WITH THE "INTERNAL SWIVEL"
SIMPLE TO USE | FEEDS FUEL FROM ANY POSITION
DEPENDABLE | SIZE: 1 1/2" DIAM. X 2" L. 2 OZ. CAP.



PATENT PENDING.

Fly safer and easier with
MULTI-SERVOS
MOTOR DRIVEN R/C ACTUATORS
POWERFUL-DEPENDABLE!

FOR BEGINNER OR EXPERT!

Using your simple single channel radio without changes you can have your choice of single or multiple controls, selective to your command. Install one in your model now and use less batteries at a lighter weight! There are no linkage or rubber band problems, those worries are gone forever with 1/2 lb. torque, motor driven "Multi-Servos"

4 GREAT MODELS, ONE FOR EVERY R/C NEED!

- MODEL 2PN . . . \$11.95
Two positions with an automatic neutral, for single control operation.
- MODEL 3PN . . . \$14.95
Two positions with an automatic neutral, plus a 2nd actuator circuit added.
- MODEL 2P2N . . . \$11.95
Two positions with two neutrals, use separately or with 3PN for second control.
- MODEL 3P . . . \$10.95
Three positions without an automatic neutral, for auxiliary controls.

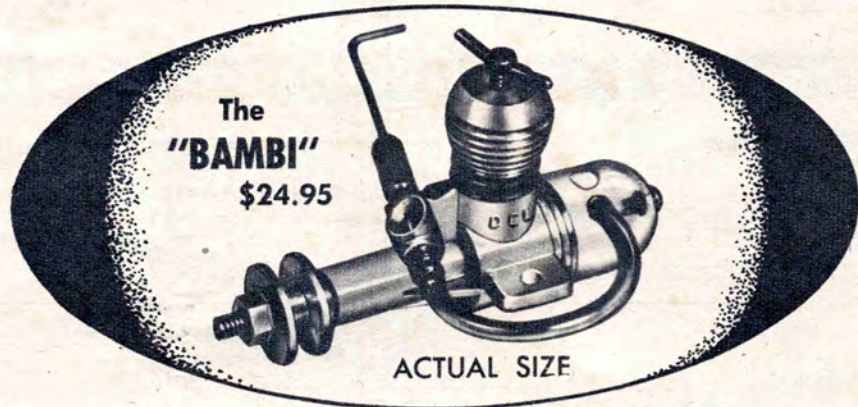
DESCRIPTIVE LITERATURE FREE!
SERVO INFO BOOKLET . . . 75c

A Product of the
J. BOLT MODEL-ENG. CO.

now available for the first time in this country

ALLBON
DIESEL ENGINES...

UNQUESTIONABLY THE WORLD'S FINEST . . .



NOW AVAILABLE FOR THE FIRST TIME IN ANY COUNTRY
THE WORLD'S SMALLEST PISTON ENGINE
A DISTINGUISHED ADDITION TO THE ALLBON FAMILY . . .

The "BAMBI"

Here is a masterpiece of "engine-makers" art . . . the world's smallest piston engine. Completely reliable, efficient and durable, the Bambi offers performance comparable to larger engines, yet provides amazingly small size and light weight. An entirely new field of model aircraft design is opened with this extraordinary Allbon achievement.

SPECIFICATIONS

.15 c.c. 7/10 oz. wt.
.009 cu. in. Class ½A

ENGINEERED TO LAST A MODELLING LIFETIME

Sole Distributors: **AMERICAN TELASCO LTD.**, Huntington, N. Y.

All communications to the editors should be addressed to 304 East 45th St., New York 17, N. Y.

Subscription prices: U. S. and Possessions—\$3.50 per year, \$6.00 for two years; Canada—\$3.50 per year, \$6.00 for two years; countries of the Pan American Union—\$7.00 per year, \$10.00 for two years; elsewhere—\$10.00 per year, \$14.00 for two years.

Please advise us if you move, giving old address and new address; allow four weeks for change of address; address subscription mail to Subscription Department, Air Trails HOBBIES For Young Men, 304 East 45th St., New York 17, N. Y.

Speaking of HOBBIES

We're inclined to believe that one individual's long-time interest in air-modeling had more than a little to do with Convair's sponsorship this year of the World Model Air Olympics. The nation's outstanding ladybird, Jacqueline Cochran (right), who is listened to with much respect by leaders of the aviation industry, has long been aware of the importance of aeromodeling to full-scale aviation. We only hope that others of influence in the aeronautical world will follow her lead. The photo was taken when Miss Cochran received the Frank M. Hawks Memorial Award "for her outstanding feat as the first lady to fly through the sound barrier." Latest honor to come her way was the 1954 Harmon International Aviation Award. Holder of numerous world air speed records for both piston-engine and jet-powered planes, Miss Cochran learned to fly in 1933. She qualified for her private pilot's license in three weeks! In the West Coast-to-Cleveland Bendix Transcontinental race she took first in 1938, then flew on to Brooklyn to set a new feminine cross-country record of 10:27:55. All this and such side excursions as flying in the London-to-Melbourne air race while managing a cosmetic business! During the Hitler War Miss Cochran was director of all women pilots in the Army Air Forces; for her work she was awarded the Distinguished Service Medal. Since the war, her cosmetic and perfume enterprises have expanded greatly. In her Lockheed executive plane, usually piloted by herself, she covers their many retail outlets throughout the country.

Although he's a bit beyond the half-century mark, Henry Wittlinger of the Bronx, N. Y., like many other hobby dealers, never seems to age, surrounded as he is by models, hobby supplies and youthful enthusiasts. Henry hit the headlines when one of New York City's evening papers billed him as "Santa and Superman All in One." Some of the parents of Mr. Wittlinger's young customers had written in saying "he is doing more to prevent juvenile delinquency than a dozen professional do-gooders." A reporter's investigation proved the contention. Henry runs a combined appliance repair store and hobby shop at 3120 Bainbridge Avenue. He's a real electrical wizard, but it's obvious his main interest is in hobby-modeling. So we salute Henry Wittlinger as our "Hobby Dealer of the Month." Got anyone you'd like to nominate? (Photo courtesy New York World-Telegram and Sun).

We had the privilege of attending a large dinner and sitting next to another individual who has a very clear idea of how valuable an activity is the building and flying of model airplanes. Our neighboring diner was John F. Victory, executive secretary of the National Advisory Committee for Aeronautics, the government's air testing labs. Mr. Victory was the man who more or less single-handedly convinced the Civil Service Commission that a special job classification—Under Aircraft Model Maker—should be established by the government so modelplane builders could go to work for Uncle Sam. How well that turned out is pretty much history now; if you're interested in such a job—building models for money—check with N.A.C.A. at 1724 F Street, Washington 25, D. C. But back to JFV: after the meal and before the speeches he had the other nine folks at the table completely agog trying to get two riders astraddle two horses. You see the riders and their mounts there at the right. Just cut out the three drawings and glue them separately on a thin cardboard, trim the cardboard down to the black hairlines. Then, says Mr. Victory: "With the cards lying flat on the table face up arrange them so as to show the riders on the horses' backs. It can be done. No cutting or bending." You heard what the man said—it can be done. Let us know if you succeed. And if you can't—check with Grandma or Grandpa; John says this "horse trick" goes way, way back.



STREET & SMITH PUBLICATIONS, INC.

Our 99th Year—Established 1855

Gerald H. Smith, President. Ralph R. Whittaker, Jr., Executive Vice-President. Arthur P. Lawler, Vice President and Secretary. Thomas H. Kaiser, Treasurer.

Advertising Director: Robert E. Park. Advertising Manager: Walter J. McBride, 575 Madison Ave., New York 22, N. Y. Midwestern Advertising Mgr.: Frank C. Smith, 230 North Michigan Ave., Chicago 1, Ill. West Coast Advertising Representative: The Maurice A. Kimball Co. Inc., 2550 Beverly Boulevard, Los Angeles 57, and 681 Market St., San Francisco, Calif.

Should You Go Into Engineering?

QUESTIONS AND ANSWERS FOR SELF-ANALYSIS

Do you really have the aptitude? Here the project director for engineering tests at one of the country's leading educational testing services shows how you can find out for yourself

By DR. A. PEMBERTON JOHNSON

■ Engineers are primarily men of action, inquisitive (always asking why? why?), imaginative, and creative. They like to do, make, or create things easier, faster, better, more cheaply than ever before. They have made possible more for your money in electricity, the telephone, radio, television, the automobile, the airplane, and thousands of other civilian or military products and services in America today.

Most, but not all, men who become engineers are graduates of an engineering college. Some exceptional men with little or no college background become recognized as engineers because of their important engineering accomplishments.

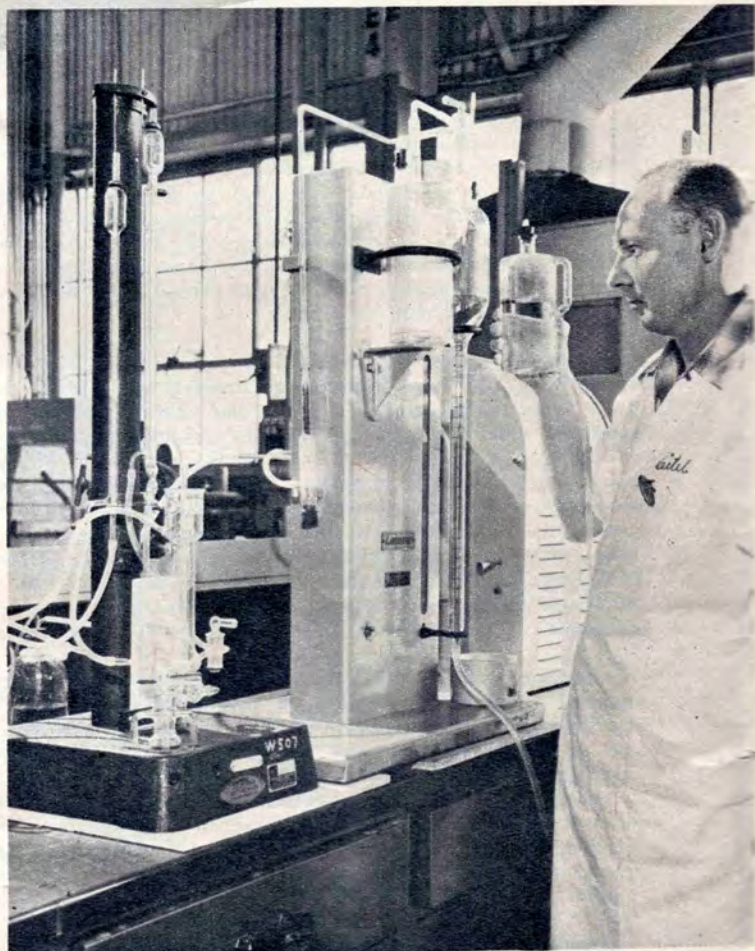
If you are between the ages of 15 and 25, your chances of becoming an engineering college graduate are greatest if you can honestly answer Yes to most of the following questions. I have assumed that you wouldn't be reading this if you didn't think you were somewhat interested in engineering. Don't be surprised if you can't answer yes to all of the questions that are presented here—few men will be able to do so.

After you have answered all the questions, compare your answers with the section on interpretations

ABOUT THE AUTHOR

Dr. A. Pemberton Johnson is a Mechanical Engineering graduate ('32) of Johns Hopkins University who became interested 20 years ago in aptitude testing. Since then he has worked with psychological tests in business, in military service, and in engineering and legal education, meanwhile earning a Master of Science degree from Stevens Institute of Technology and a Ph.D. degree from Purdue University. At Purdue University during 1946-49 he counseled nearly 2000 engineering freshmen regarding their careers in engineering. Since 1949 he has been Project Director for Engineering Tests at Educational Testing Service, Princeton, New Jersey.

Educational Testing Service is a non-profit educational organization formed in 1948 to provide nation-wide service in tests for education, government, and industry in the U. S. It does not test or counsel any individual students. This is the organization that gives the College Entrance Examination Board Tests.



of answers at the end. This section should help you judge fairly well your chances of graduating in engineering, even though you can give a yes answer to only five or six of the questions.

If you can answer yes to only a few of them, you may want to talk the matter over very carefully with your parents and your high school principal or guidance counselor. If you have any doubts after answering these questions, I suggest you see your principal or counselor about taking a series of vocational aptitude tests.

1. Have your grades in high school mathematics courses been in the top third of your class?

Yes.....; No.....

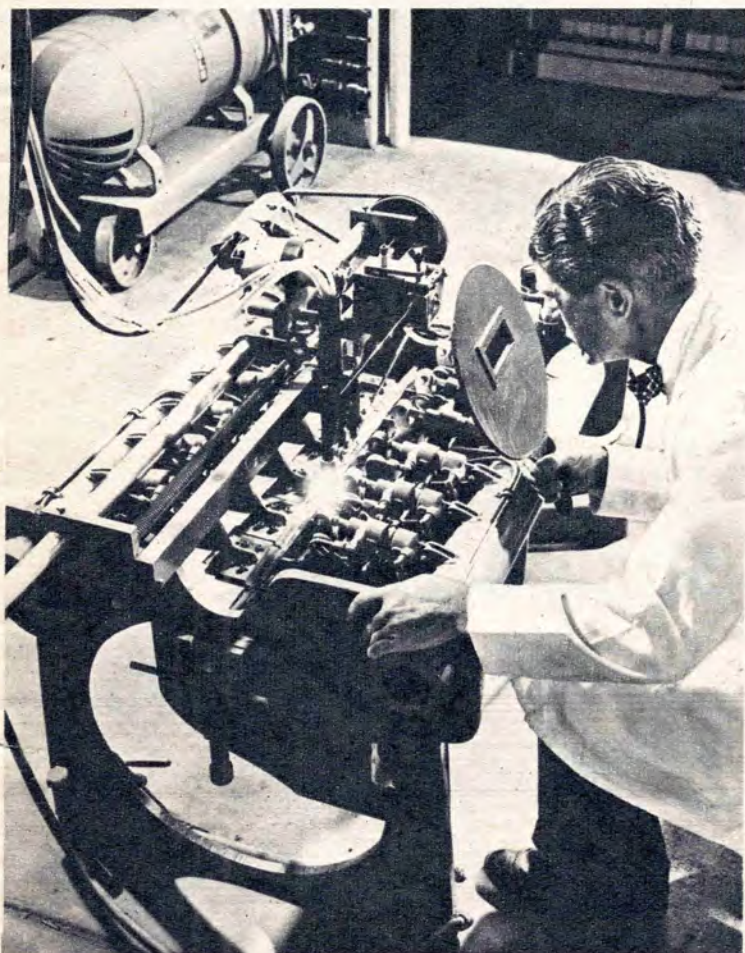
If you are interested in technical work and your grades in arithmetic and geometry have been good but those in algebra and trigonometry have been poor, you may want to consider carefully a two-year technical course of study that is available at a technical institute, a community or junior college, or in a few industrial concerns, rather than an engineering college course. Some men make top-third grades in easy or poorly taught mathematics courses. It's best then that they have a counselor check their performance on a standardized achievement test in mathematics, particularly in intermediate algebra.

2. By the time you graduate from high school, will you have completed successfully the units of mathematics you need to enter the engineering college of your choice? Yes; No



SCIENTISTS EXPLORE THERMAL BARRIER

No sooner had man conquered the "sonic barrier" than another barrier loomed up to challenge his ingenuity. This time it was heat, or in scientific terminology, the "thermal barrier" which presents a chief problem to be overcome in the immediate years ahead. If an aircraft maintains a sustained speed of Mach 2 or better (more than 1500 mph at sea level), the friction created by its passage through the air will generate temperatures high enough to melt or seriously weaken most present materials used in the airplane's structure. New temperature-resistant metals and inorganic materials such as plastic must be found before long-range, ultra-high-speed planes can be built successfully. New paints and finishes must also be developed. For this purpose, Northrop Aircraft Co. Inc. of Hawthorne, Calif. has established a research laboratory which devotes special attention to thermal barrier problems. Elaborate scientific equipment tests every type of material from temperature-resistant steels, titanium, plastics, adhesives and various chemicals to glass, textiles. A machine shop fabricates test specimens. Photos show—p. 20: making carbon determination in steel. This page: center, mechanical Heliarc welding; top, spectrochemical analysis; and Spectrophotometer.

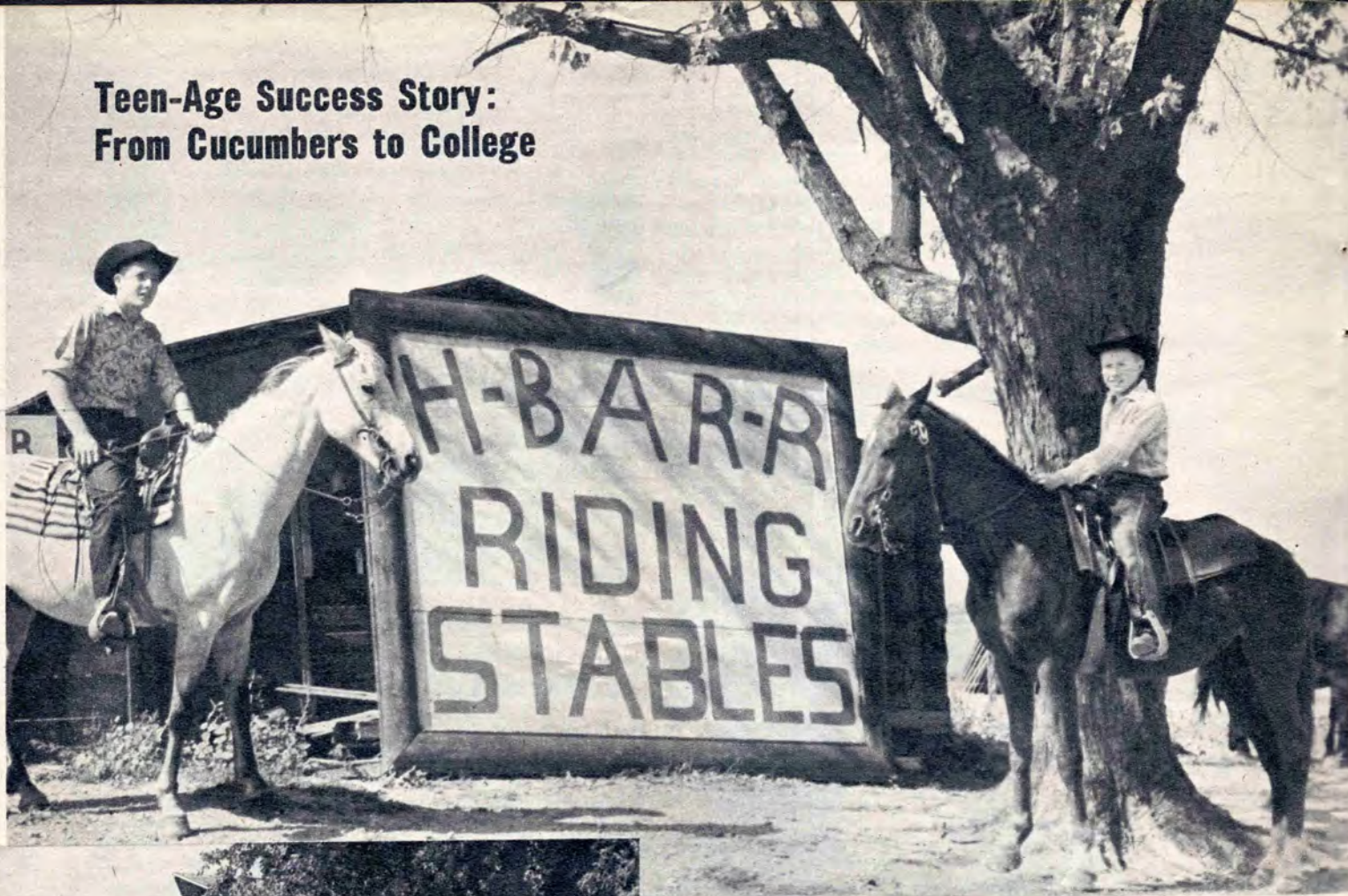


Most engineering colleges require the completion of at least 3 units of mathematics including elementary and intermediate algebra, $1\frac{1}{2}$ units; plane geometry, 1 unit; plane trigonometry or solid geometry, $\frac{1}{2}$ unit. A few colleges require enough mathematics so that the student may begin calculus in the first semester of his freshman year. If you like mathematics but won't have enough units in it, don't give up. Talk with your principal and write the admissions officers of the engineering colleges of your choice for ideas as to how to get the mathematics you need.

3. Have your grades in your high school science course(s) been in the top (Continued on page 64)



Teen-Age Success Story: From Cucumbers to College



Tourists and local people flock to H-Bar-R ranch to enjoy its Western flavor and ride the horses cucumbers bought.

The vegetable that made it possible—Roy and Harold picking the cucumbers. Revenue from patch keeps growing steadily.



Youngest Riding Stable Operators Parlay Pickle-Pickling Project Into Profitable Business

■ Two of the most ambitious young fellows in the country are Harold and Roy Smale of Elkhorn, Wisconsin, who own and operate the H-Bar-R riding stables. This particular outfit has been attracting a lot of attention in Southern Wisconsin—since it is run by two of the youngest horsemen in the business. The proprietors are teen-agers—Harold, 15, and Roy, 13. Both are students in the local high school.

The boys care for their string of 20 horses and still do much of the farm work on the family's 80-acre farm. Their father is employed off the farm at a local factory, so he depends on his sons to keep up the farm chores while he is away from home.

"We really owe our riding stables to our cucumber patch," confides Harold, "for that's what put us in business. For one whole summer we planted, weeded and picked cucumbers for a local pickle factory. With the money we earned from our patch, we purchased



Harold getting a horse ready for a customer in front of the tack house. Electric clock over the door is used to time the riders.

our first horses for the riding stable. We really sweat beneath that hot sun, but it was well worth it."

The brothers' initial earnings were enough to purchase four horses from an Arizona rancher.

"When the horses arrived, we found we didn't have quite enough money, so Dad came to our rescue," said Roy. "We paid him back with the money we earned from our first riding customers. Dad helps and advises us in our 'horse deals' and we all love horses."

"At first we didn't know what to call our riding stables," says Harold. "We wanted it to have a 'Western flavor'—we decided on 'H-Bar-R.' The 'H' stands for Harold and the 'R' stands for Roy."

The riding stables are not only different by having two of the youngest operators in the business, but they have made them even more different by executing their own ideas in the stable's make-up.

In need of a corral to keep and pen the horses while waiting for riders, Harold figured poplar trees growing nearby would serve admirably. He cut a number of them down and trimmed the branches from their trunks. Explained Harold: "Piling them up, we let them cure all winter. Then in the spring, my brother and I built a large corral to pen the horses. We wanted our corral to be different and yet be Western-like, so we didn't use any nails in building it. Instead, we wired the rails into place and used them just as they appeared with the branches trimmed from them."

"To get folks interested in our riding stables, we inserted a small ad in our local paper," Roy recalled. "The ad announced that we had horses to ride from \$1.00 an hour and that we were open seven days a week—and even for moonlight rides at night. The ad seemed to do the trick, for it wasn't long before customers began to show up regularly. On some days we didn't even have enough horses to go around."

Round-up time. Roy and Harold ready to drive their horses to the barn for water. The brothers do all their own breaking in.



Riding is not only for the adults, kids love it, too. A group of youngsters experiencing the thrill under watchful eyes of the boys.

South Wisconsin is noted for being a resort area, so many tourists patronize the riding stables. The boys operate them profitably the year around. During the fall months there are hayride parties, and during the winter there are sleigh ride parties, cutter rides and winter entertainment of many sorts.

"During the spring and summer months we have trail rides," report the young Smales. "A group rides together through the fields, across the streams and down the country lanes. After a night trail-ride, we end it up by having a wiener roast and build a large campfire out behind the stable. We have lots of fun, meet lots of interesting people and make money too."

With their herd of horses having grown into more than twenty mounts, the boys still raise cucumbers for money to put toward saddles, blankets and bridles.

The boys own a trick palomino mule which can perform a number of unusual tricks. The mule can sit down on its hind legs, lie down on its side with one of the boys sitting upon it, balance on its hind legs, bow and sit in a rocking chair!

Both Roy and Harold are daring buckaroos, for they ride and break their own horses. More than once they've found themselves flying through the air and dumped upon the hard ground, but they grin and get back into the saddle for more.

The number of customers is based mainly on weather factors and the particular day of the week. On weekends when folks come to the nearby lakes for a vacation, the boys have 20 to 30 appearing for rides. They have boasted as high as 60 riders in one day—and that's a lot of riders.

What do the boys do with the money they earn from the horse business? They buy all their own riding gear for the mounts and they both sport fancy cowboy hats, boots and shirts. "There's always something special a fellow needs, so we rely on our horses to afford it," they explain. "The extra money we earn from our horses we're saving for our education."

The trick palomino mule is being put through paces. It was acquired from an ex-circus clown, has become a great pet at the H-Bar-R.

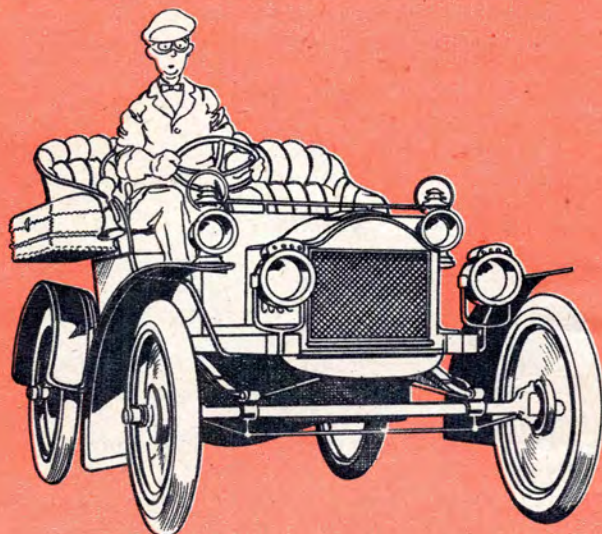


AUTO Progress

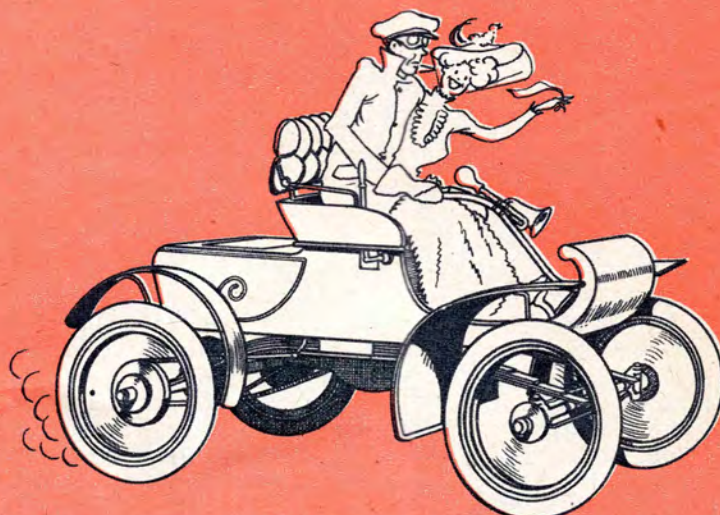
By DOUGLAS ROLFE

The Oldsmobile Story

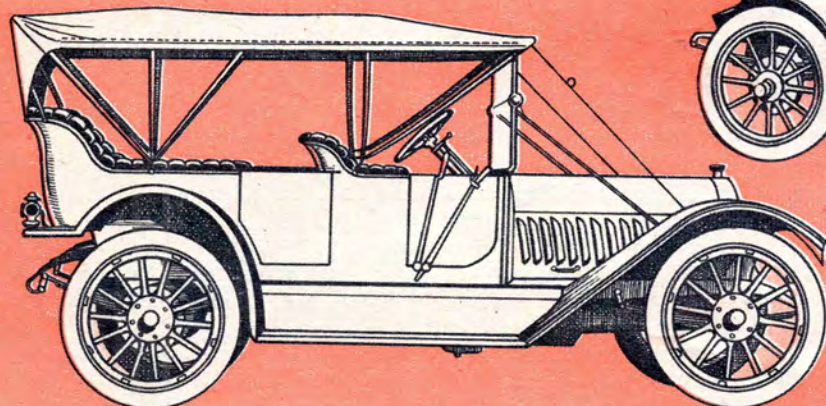
The "Merry Oldsmobile" chalked up many firsts in automotive world, has never lost popularity



With tonneau body, wheel steering and various other modifications, the 1904 model was substantially the same old "Merry Oldsmobile." Had somewhat larger (8 hp) engine.

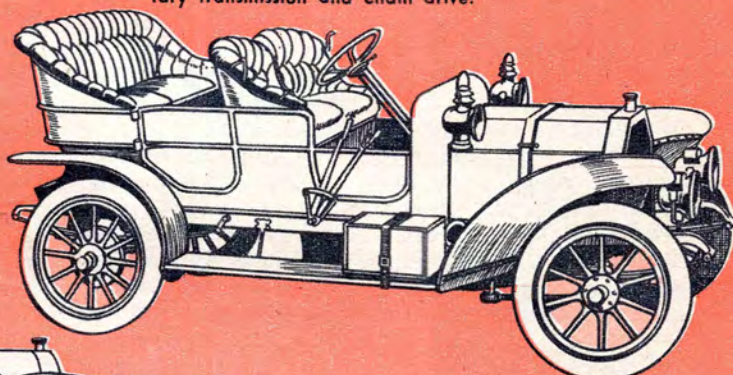


America's first mass-produced automobile, the 1900 model curved-dash Olds, had a 1-cylinder engine, 2-speed planetary transmission and chain drive.

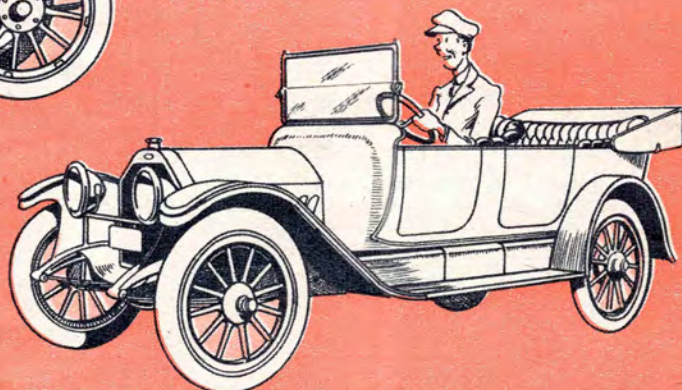


First Olds sixes appeared in 1908. The 1910 Oldsmobile Limited shown was a large car, capable of 75 mph, cost around \$4,000. Even larger "Limited" appeared in 1912, cost \$5,000.

1915 Olds Touring Model 42 had a 4-cylinder engine with overhead valves. Electric starter and lights, demountable rims and one-man top were now standard equipment and a great step forward for Olds.

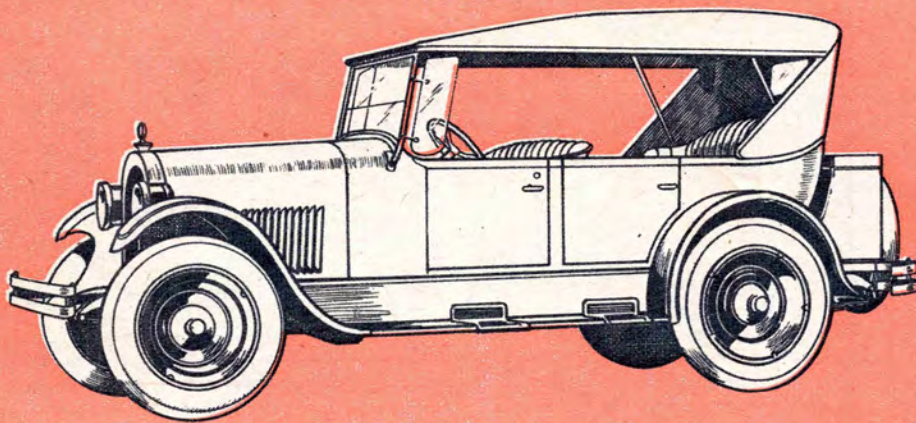


1906 models introduced a 26 hp 4-cylinder engine, cone-type clutch, 3-speed gear box and shaft drive. First side-entrance Olds.

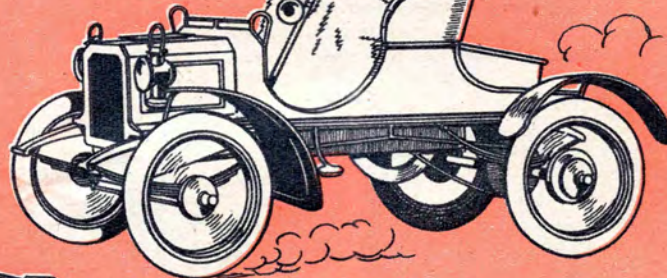


One of the great pioneer automobile companies of America, if not the world, Oldsmobile was founded by Ransom E. Olds who designed and built the firm's first in 1897. Olds was also the designer of another famous American car, the Reo (now defunct). Early

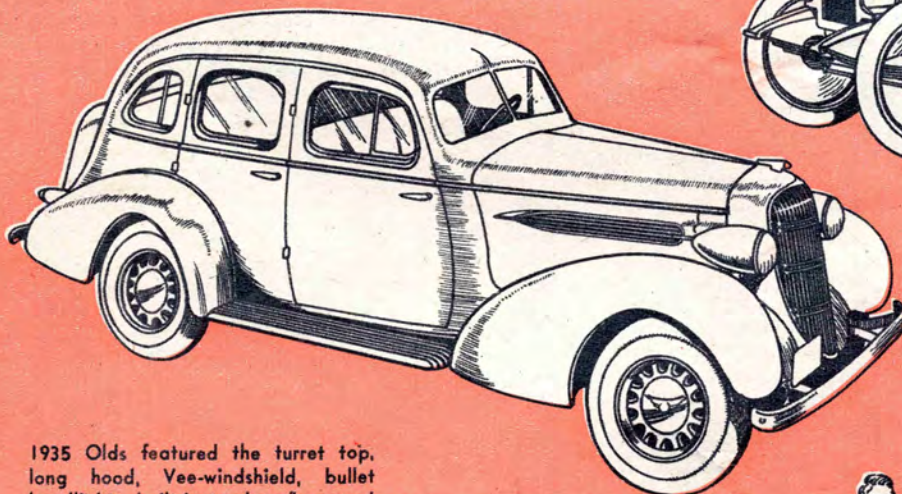
Olds cars were one-cylinder jobs, the very early models having a 4 hp engine. By 1900 Olds had increased the power rating to 8 hp and had gone into mass-production—the first such instance in U.S. auto history—and Olds cars proved so popular that this



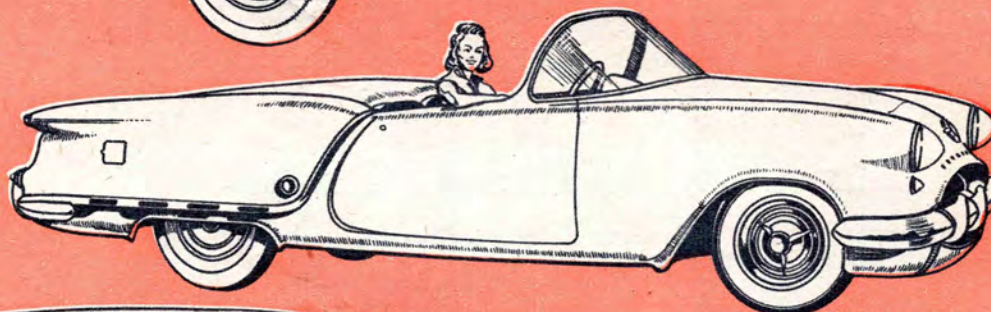
The good-looking light six sport touring Olds produced in 1924 boasted such standard equipment as steel disc wheels, trunk, running-board scuff plates and adjustable windshield wings. Customers were offered a wide selection of colors to meet their tastes.



This curious 1905 Reo belongs here only for the reason that, although the product of an entirely different company, it was nevertheless designed by Ransom E. Olds, from whose initials the name Reo derived.

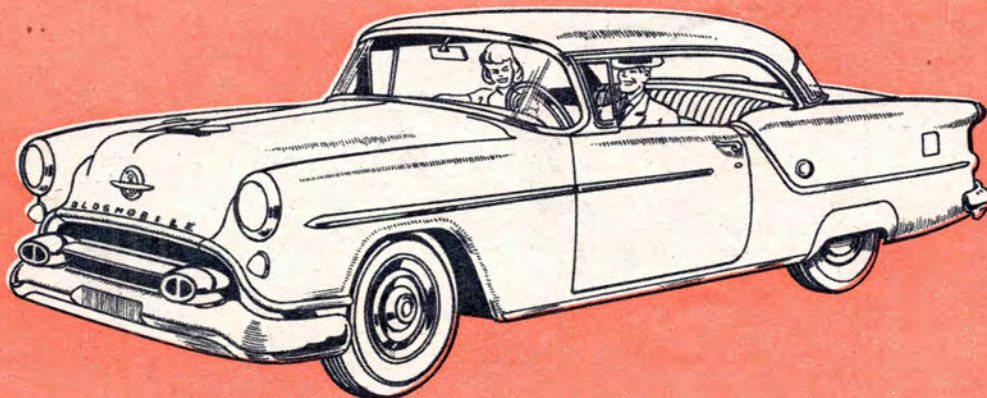


1935 Olds featured the turret top, long hood, Vee-windshield, bullet headlights, built-in trunk and pressed steel wheels common to most top makes of the period.



DOUGLAS
ROLFE

Experimental Starfire of 1953 had a 200 hp V-8 engine, Fiberglas body and styling now to be found in standard Olds cars.



Sweeping lines of latest Super-88 Holiday Coupe show at a glance the extraordinary progress made by this pioneer automobile firm since "Merry Oldsmobile" days.

particular model even inspired a popular song. Thereafter followed a 2-cylinder model, a number of 4-cylinder jobs, various sixes both large and small and, in 1916, a V-8. Olds was first U.S. car to adopt Hydra-Matic drive, which was introduced as optional

equipment in 1940. Postwar models have shown a consistent increase in horsepower and refinement of design. Present models are among the most powerful cars on the road today, among the best styled and equipped. Oldsmobile is still traveling out front.



Famous West Coast model boat designer comes up with this
Half-A powered air-prop hydro you can make in an evening!

Samba Sled

By BILL BAUGHMAN

■ This speedy air-prop hydro that almost flies is for you airplane bugs with a hankering to give model boating a try. You can build it from material you undoubtedly already have or can obtain very quickly. The result? A sturdy little job with a good wide beam that will tear over the water at speeds well worth your building effort.

Start work by cutting out the two pontoon tops and rear brace from $\frac{1}{8}$ " plywood, and the four pontoon sides from $\frac{1}{8}$ " balsa sheet.

Fasten the rear brace and front brace to the two pontoon tops, using Weldwood glue and small C clamps. When glue has set, drill the four holes that will later take the bolts to hold mount M2. Now turn the glued framework over and cement the pontoon sides in position. Be sure they remain vertical while the cement hardens. At this point B1 to B4 can be cut, fitted, and cemented in position.

Cut and bend Mount M1 and M2. Drill all holes designated, making sure that base holes line up with those al-

ready drilled in pontoon. Bolt the mount form to the ply and balsa framework, using lock washers. Put several coats of cement over the bolts and nuts that will be on inside of pontoons to make sure they stay tight and do not leak.

The pontoon bottoms are now planked with scrap $\frac{1}{8}$ " balsa sheet, set crosswise to give a nice smooth contour. When cement has dried, drill hole in rear brace to later accept rudder post, sand all wood to desired contour and smoothness and finish with fuel-proof dope, sealer and at least four or five finish coats.

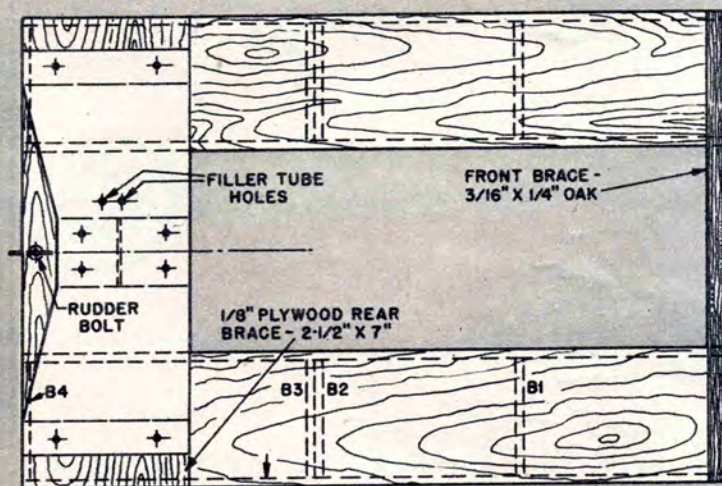
Fit and fashion front of M1 to hold your particular motor. Invert motor and mount securely, using lock washers on all nuts. Install #4 Perfect tank—or equivalent—in area shown; drill holes to accept filler tubes. When ready, fasten fuel line to tank and motor; fasten M1 unit to M2 with bolts and lock washers.

Cut the rudder from sheet brass or tin can stock. Solder to mounting bolt head and fasten unit in hole previously

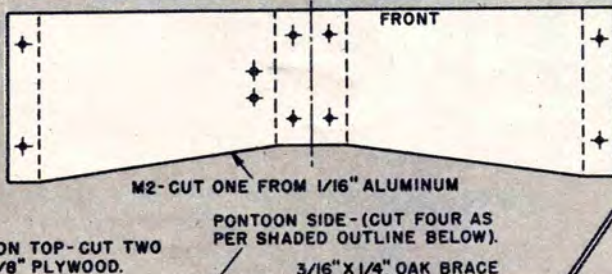
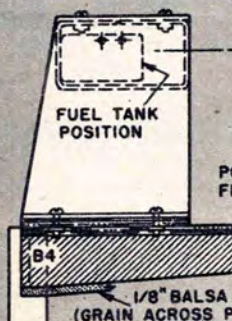
drilled in rear brace for that purpose, and you are all set to go.

With these air boats, it is best to run in a large circle on a large body of water because they have lots of speed and will run up on shore at times—so the more room you have the better the runs. Should you desire, tethered time runs with boat fastened by light cable to a center pole (Continued on page 81)

Full-size plans for Samba Sled are on Group Plan #1154, Hobby Helpers, 770 Hunts Point Ave., New York City 59 (50¢)



PONTOON SIDES CUT OUT OF $\frac{1}{8}$ " SHEET BALSA



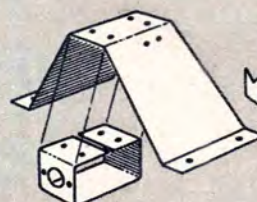
PONTOON TOP-CUT TWO FROM $\frac{1}{8}$ " PLYWOOD.

PONTOON SIDE-(CUT FOUR AS PER SHADED OUTLINE BELOW).

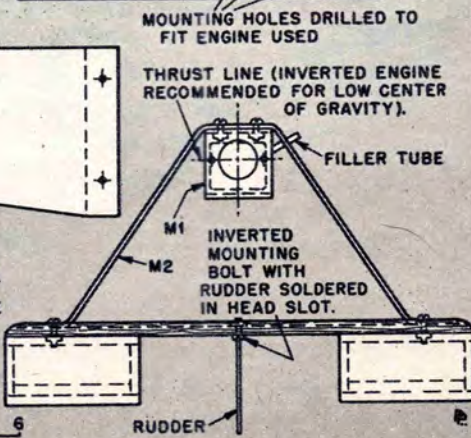
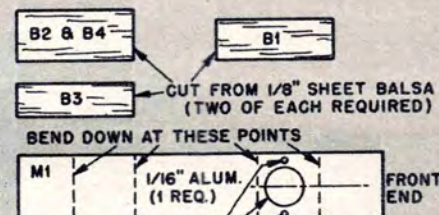
3/16" X 1/4" OAK BRACE

1/8" BALSA SHEET (GRAIN ACROSS PONTOONS)

SCALE IN INCHES

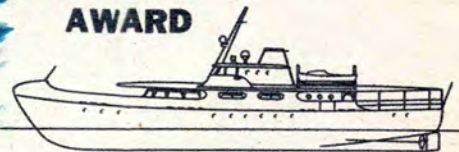


SKETCH OF PARTS M1 AND M2 AS THEY APPEAR WHEN BENT TO SHAPE



Boat Design Competition

FIRST \$50 AWARD



Here's a good example of first prize winner in boat design competition—a diesel-powered 200-ft. ocean-going yacht. The proportions are not only pleasing but also correct. Quite a bit of sound imagination went into the design, such as shape of the bow which prevents waves spilling over deck. Well streamlined weather-proof bridge, skylights on upper deck to illuminate the salon, lots of room.

SECOND \$25 AWARD



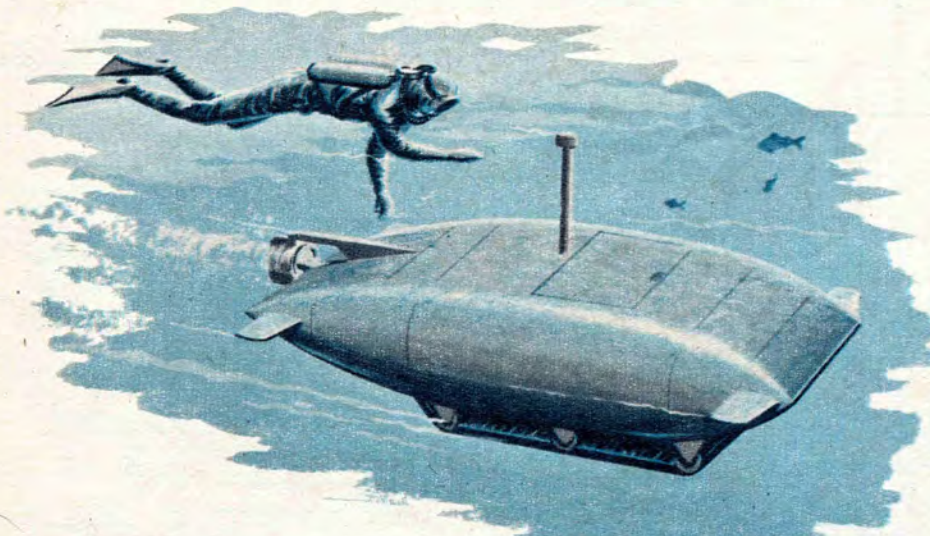
Fully deserving second place is this three-hulled sailer based on Class E ice boat. The floats are articulated at attachment point. Front float with vane at bottom is used for steering, center board or dagger boards adjustable. Overall length 19 ft.



THIRD \$10 AWARD



The Atomic Crab qualifies for third prize. An interesting gadget and imaginative design, it is overshadowed by the yacht and the sailboat. Equipped with a snorkel, it is amphibious and can be launched from subs for demolition work.



Rules governing this design competition are as follows: Profile (side), plan (deck) and (cross) sectional views of the proposed craft will be required, plus any detail sketches necessary to illustrate unusual features. Do not handicap yourself by submitting hull drawings less than 6 inches in overall length. Give sketches of craft from three-quarter front and rear positions. Photos of a model of the proposed design may be included. Information of powerplant(s), estimated performance, NOVEMBER, 1954

dimensions and explanations of special features are required. Data as to age, occupation or schooling of the entrant should accompany each submission. Mail entries to Boat Design Competition, Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y. Entry each month judged most practical or of greatest significance will receive \$50; \$25 will go to second place and \$10 for third. The editors regret they cannot enter into any correspondence or return entries.

**AMERICA'S BASEMENTS BLOSSOM
WITH PRIVATELY OWNED RAILROADS**

Look Out Below!

**Bob's entire life is wrapped up
in railroads; he works for one, owns
one, even lives on "Railroad" Avenue!**



Oh, boy! A young neighbor expresses his approval over one of the locomotives, part of the large rolling stock of the basement R.R.

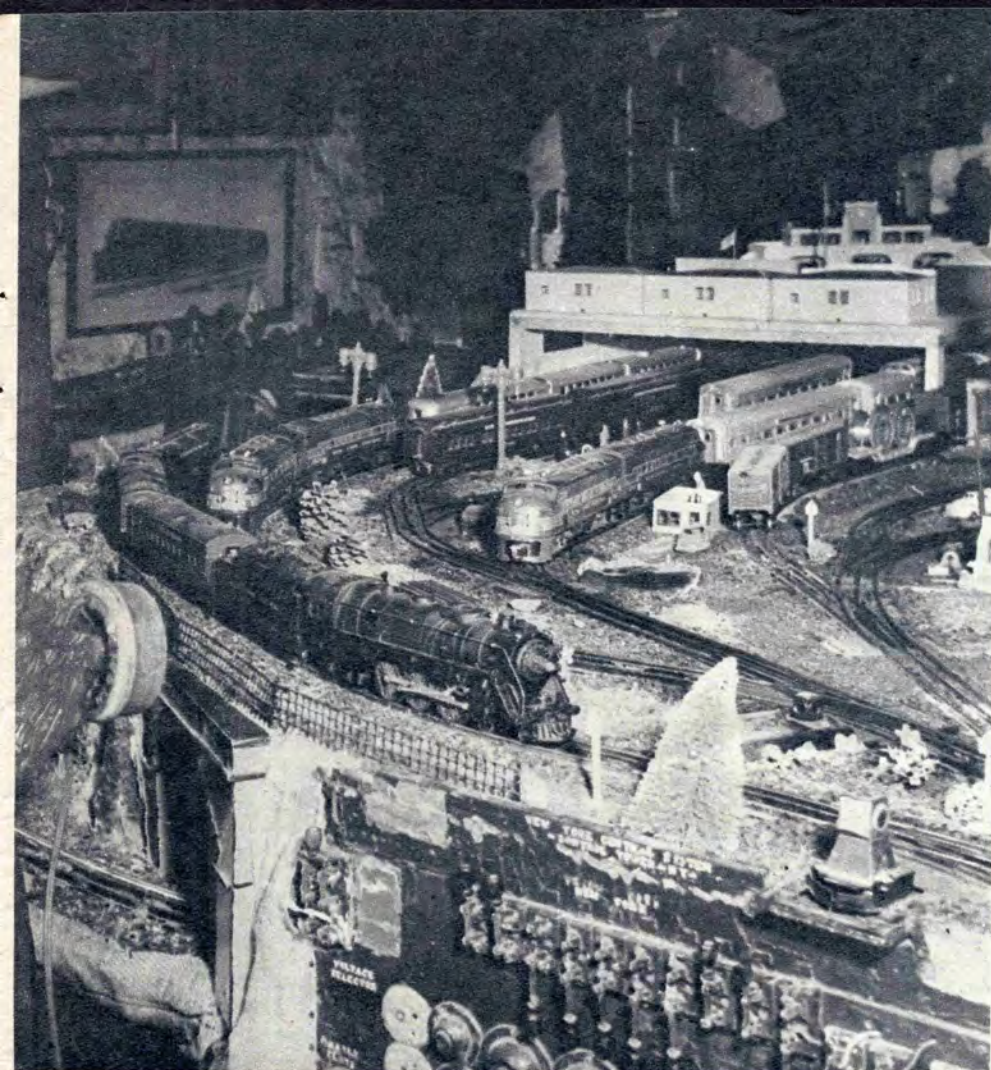


Smooth functioning of the railroad and its many components requires constant attention as well as a good hand with tools to make repairs. Locomotive gets preventative surgery.

Miniature N.Y. Central diesel speeds over bridge. McKeand's private railroad has been expanded to include other enthusiasts. Value of rolling stock and community built adjacent to tracks is nearly \$5000.

In any ordinary house the basement may still serve as either a storage place or a rumpus room, but Robert McKeand, Jr. owns no ordinary home. Rail trunk lines and spurs take up all the available floor space in his basement. A railroad man by trade as well as avocation, he works for the New York Central. McKeand gave his trains places to go; they do not run just on bare tracks, but wind their way through communities, over bridges, pull in and out of stations and freight terminals. On "streets" adjacent to the tracks there are stores, homes, vehicles and pedestrians. There is no question—it all looks real. Tracks are secured in concrete to prevent damage from vibration. The McKeand miniature railroad has grown to such an extent that its operator has assistants to help him run it. It is a prize diversion for his two youngsters and their neighborhood friends who can be found in the basement at almost any hour ready to call out the traditional "All Aboard!"



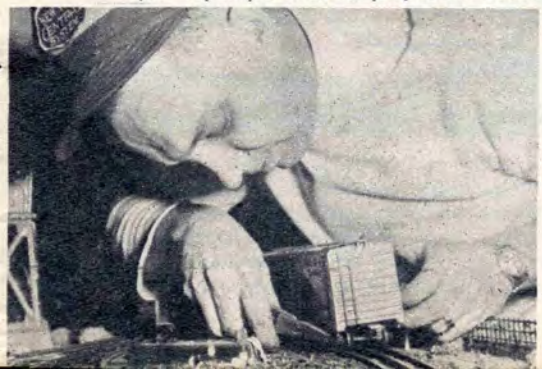


Elaborate set-up consists of hundreds of feet of track and more than 20 "locos" to pull the many passenger and freight cars.

No railroad is complete without a tunnel. Here a freight train enters one built at the base of staircase in McKeand basement.



Accidents will happen even on the best-run railroads. Here McKeand is doing an "on the spot" repair job when car jumped the tracks.

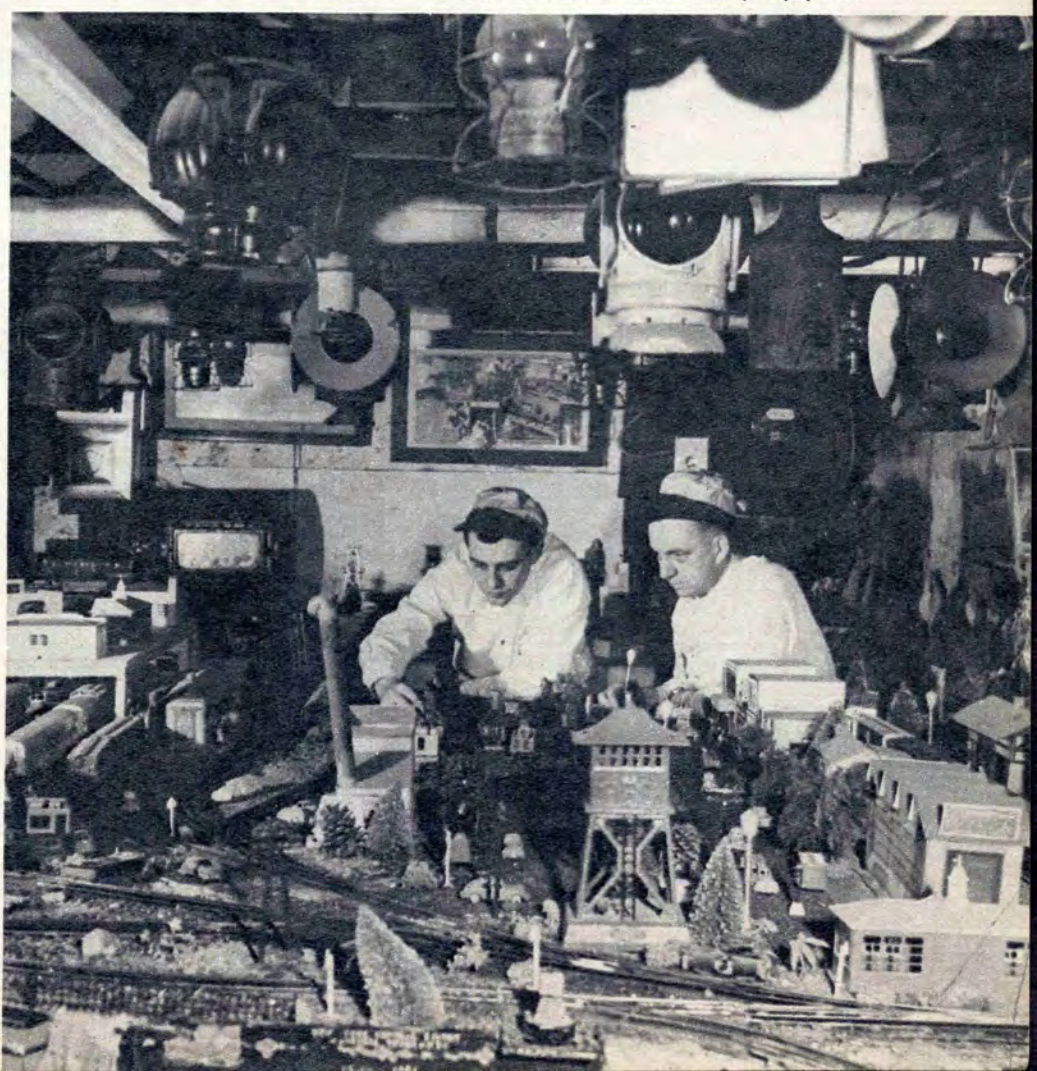


Every "man" who takes his place along the right of way has a specific job. A signalman in palm of hand, gravel carrier by track.



Community by the railroad tracks was built of wood and cardboard. Houses can be shifted when change in scenery is desired.

Even walls and ceiling of the basement are on duty, being decorated with an assortment of lanterns and railway equipment.

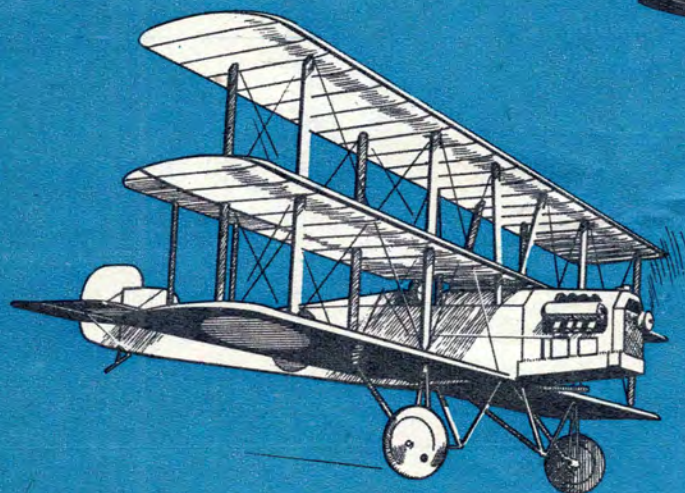


AIR PROGRESS

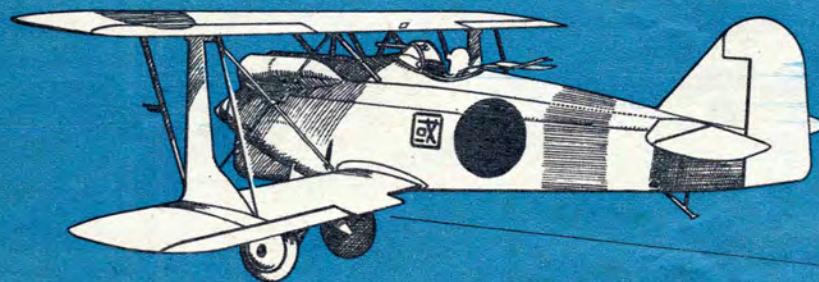
By DOUGLAS ROLFE

Japanese Air Force

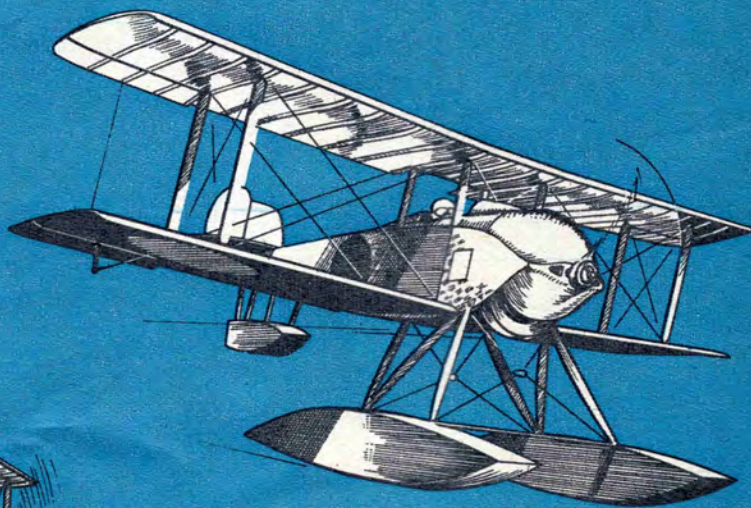
AFTER WORLD WAR I



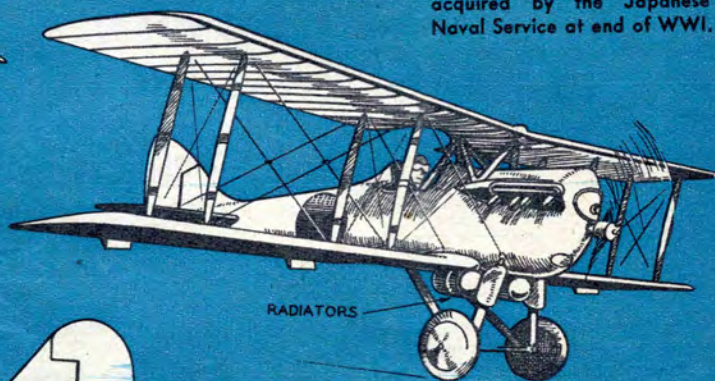
Mitsubishi torpedo bomber (450 hp Napier engine) appeared in 1921 when Japanese naval aviation was strongly influenced by British design.



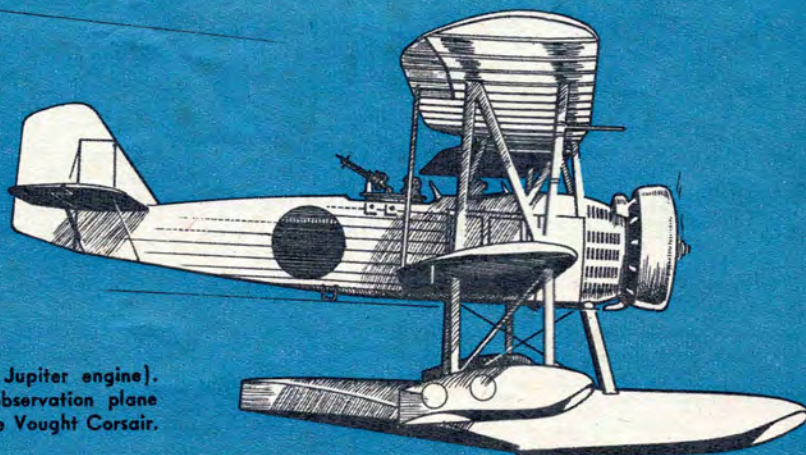
Kawasaki fighter of 1932 was reputed to make 205 mph with a 500 hp engine. Note curious interplane strut arrangement.



Sopwith seaplane Scout (110 hp rotary engine). Several of these modified Schneider Cup racers were acquired by the Japanese Naval Service at end of WWI.



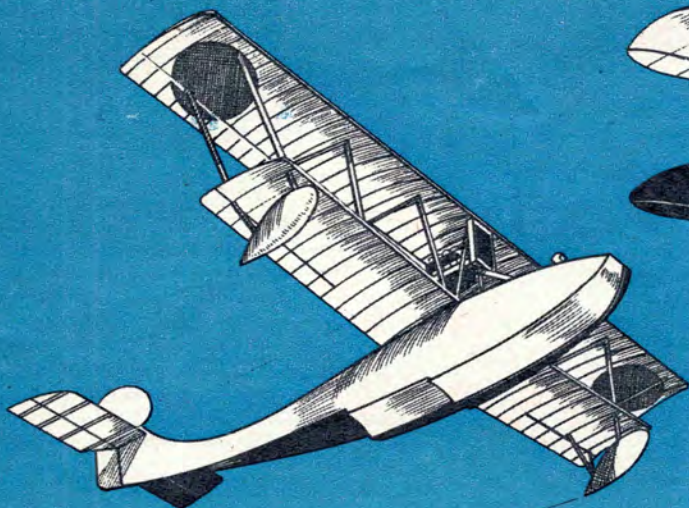
First Jap-built fighter was this Nakajima-Nieuport 29c-l. (300 hp Hispano-Suiza engine.) 1922.



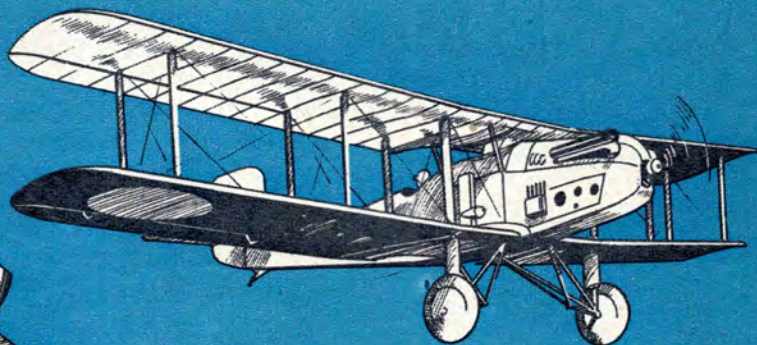
Kawanishi 90-11 (450 hp Jupiter engine). This shipboard catapult observation plane was an obvious copy of the Vought Corsair.

The Japanese air arm dates from about 1912 and was originally formed as one body without distinction between naval and military wings. It was later reorganized to include separate naval and military forces. Early equipment was entirely foreign and included Curtiss and Farman bi-

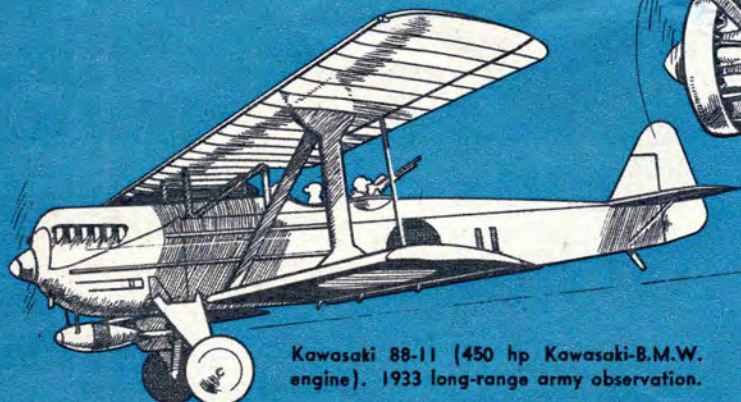
planes plus a few Deperdussin monoplanes. After World War I a number of French Nieuport fighters were purchased, but it was about this time that a British mission arrived, and for some while thereafter a strong British influence became apparent, particularly in Japanese naval aircraft. There



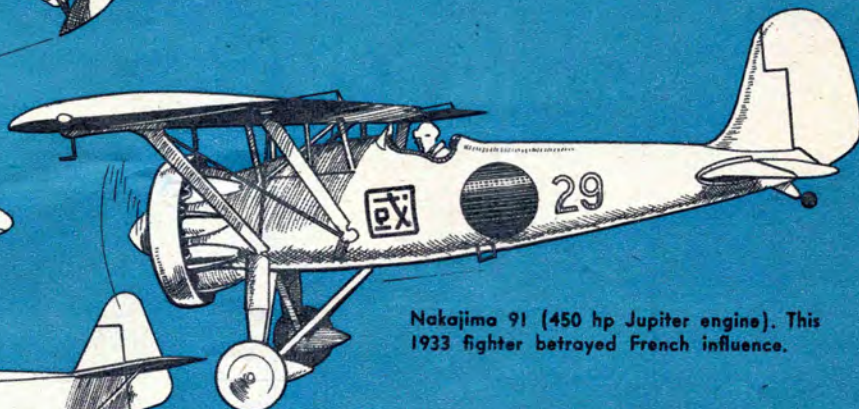
Tellier two-place flying boat (200 hp Hispano-Suiza engine). One of the many foreign aircraft acquired in 1918-1919.



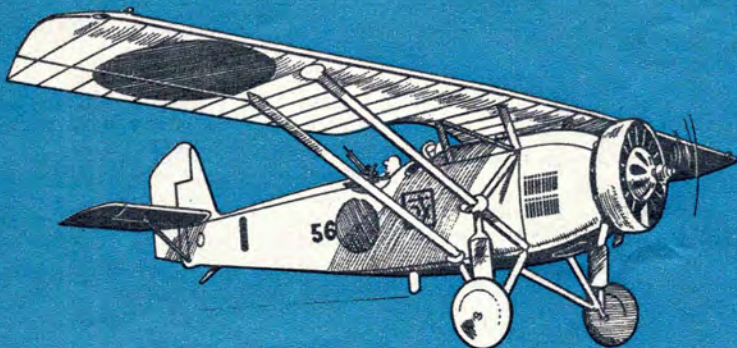
Mitsubishi torpedo bomber (450 hp Mitsubishi-Hispano engine). Another example of British influence in 1928.



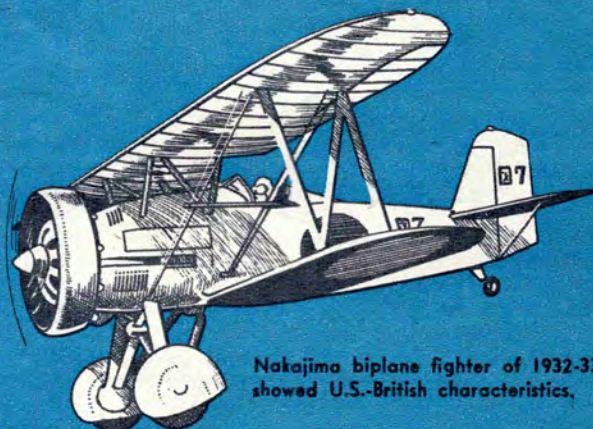
Kawasaki 88-11 (450 hp Kawasaki-B.M.W. engine). 1933 long-range army observation.



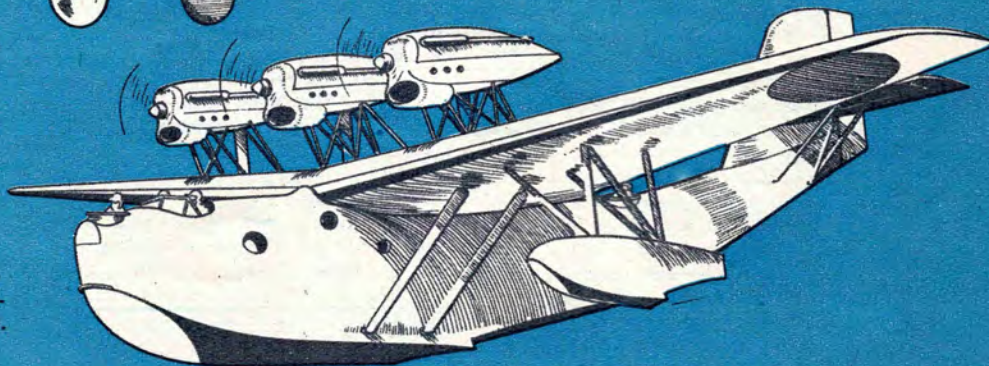
Nakajima 91 (450 hp Jupiter engine). This 1933 fighter betrayed French influence.



Mitsubishi 92 (420 hp Mitsubishi-Jaguar engine). 1932 army observation.



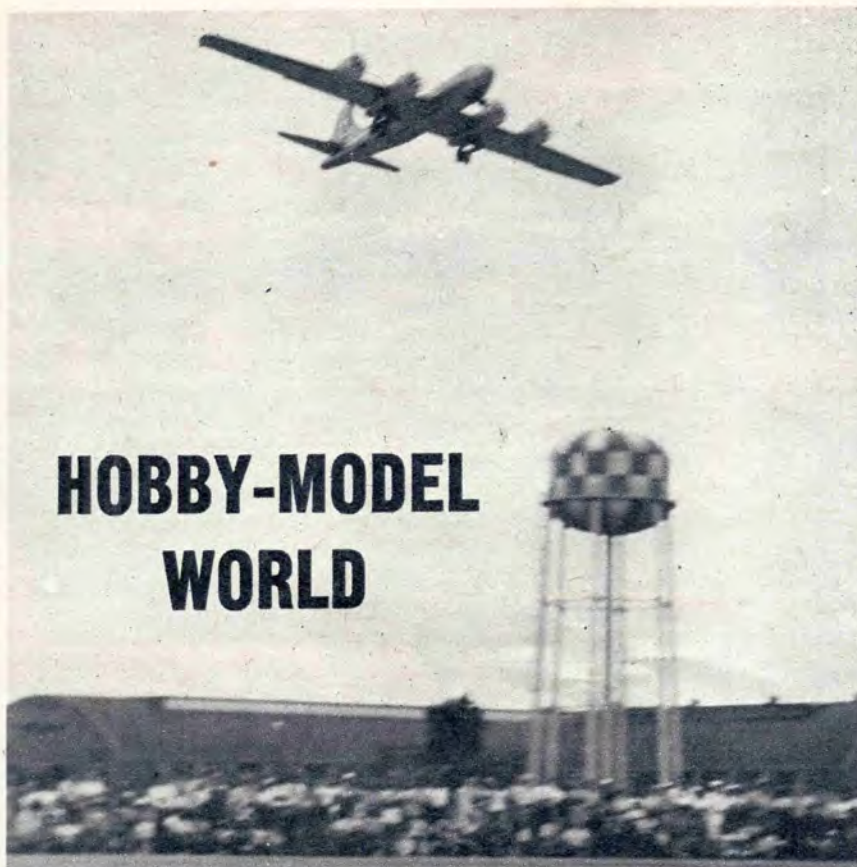
Nakajima biplane fighter of 1932-33 showed U.S.-British characteristics.



Hiro Navy Yard 90-1 (three 700 hp Mitsubishi-Hispano engines). All-metal patrol-bomber was mixture of Short/Dornier design.

was also a marked German influence. The Japanese continued to rely on foreign-built aircraft until about 1921, and even after they commenced to produce their own planes these were mostly copies of foreign types. Then for a long period of time the Nipponese maintained great secrecy

about their air force—and in 1941 they flung hundreds of first-class aircraft against us which few realized they had the capacity to design and produce. . . . The second part will take up some of the more interesting and formidable types employed in World War II.



HOBBY-MODEL WORLD

Real eye-catcher at National model aero meet was this 84 inch span model B-29 flown by Joe Braun of Kokomo, Ind. Power was four Torpedo .29's. All-up weight was 11½ pounds.

■ This is one of those "now it can be told" tales. Since Convair and Lockheed have their VTO (vertical take-off) fighters in the public eye, it reminds us of an upsetting incident at Wright Field several years back. Upsetting for the slide-rule boys, that is.

Jim Walker was paying one of his periodic visits to Adam Stolzenberger and the model testing laboratories there. That's Jim Walker of American Junior Aircraft, you understand. Inventor of U-Control, many-time National radio control champ, originator of sonic control for models, etc., etc. Well, Jim got to flying a few models around the circle and ended up with his latest trick which at that time was his saber-dancing Fireball. This model was rigged so offset lines and two-speed engine control could enable Jim to hover the plane model prop-up, in midair.

The Wright Field model makers thought it was great stuff. But some of the top brass nearly fainted on the spot. We did hear that one swallowed his cigar. Of course you can guess why. In some very secret tests, experimenters were trying to figure out how to hover VTO craft. And there was a model man doing it with no trouble at all—and right out there where everybody could see how!

Just as we've always said—you can learn a lot from modeling. No, they didn't lock Jim up. Somebody finally convinced the brass that Walker had just beaten them to the very interesting secret of VTO hovering flight.

Stamp News. The Netherlands have issued a stamp honoring modelplane

builders. Shows a youngster releasing a hand-launched powered model.

How to Win Friends. And influence friendly editors, too. Many hobby, model, and/or sporting organizations could take a leaf from the book of the National Outboard Association, which governs most big boat racing in the outboard engine classes. Whenever a big race comes up we get a nice letter from the NOA vice-chairman for the district in which the event is scheduled. It's an invitation to attend or an offer to supply details on the race if we can't make it in person.

A very complete "publicity data sheet" is furnished to all race sponsors and they're told to fill one out for each publication on a selected list—and no fooling about it either. The reporting form gives an informative picture in miniature of the event. We suspect that a request to executive secretary Mary Benson of the NOA at 707 Market St., Box 134, Knoxville, Tenn., would bring you a sample copy of this publicity data sheet which might well be adapted to your own organization and its special needs.

Secretary of the NOA, incidentally, and one of its outstanding outboard racing drivers is William L. Tenney, known to many modelers for his past efforts in the development of the Dyna-Jet engine.

Police Cooperation. From the Norwood, Mass., Society of Model Engineers' "Newsletter" we note that the Watertown Nuckle Nickers meet Saturday evenings in the Watertown police station. Good for the Watertown police! The NSME, incidentally, has its own flying area at the

municipal airport and complete insurance coverage for individual members in good standing. Lee Renaud is a wheel in the club; Al Trefethen is another outstanding contestant.

Indoor Interest Shifts to Cleveland.

At one time during the mid-thirties when indoor modelplane flying was a sizable activity, interest centered in the big cities of Boston, New York and Chicago, with a few scattered contests across the country. But most any indoor meet in Boston, for instance, would draw 100 or more enthusiastic devotees of the fragile rubber-powered hand-launched stick or cabin categories.

With the advent of the "gas" engine, interest swung from indoor flying to outdoor competition and attendance at the indoor contests dwindled everywhere. Lack of suitable flying sites was a difficulty, too.

At present the biggest indoor meets are held in Cleveland. Such a contest in Cleveland sees far more contestants than in the National championships, for example.

Harry McCall of the Cleveland American Airlines Gas Model Club remarks that "there seems to be some doubts in the minds of some people regarding indoor meets. Cleveland is outstanding when it comes to such activity."

"Each year," continues Harry, "there are two major indoor meets. One in January is jointly sponsored by the Coca Cola Bottling Co., the Cleveland Press and the Cleveland Recreation Board. In March or April there is one sponsored by the AAGMC and the Cleveland Press. The Press pays for the use of the Cleveland Armory and the club furnishes all the trophies and prizes. This year we had 140 entries! We had trophies for 1st, 2nd and 3rd places in each of 12 different events."

"We in Cleveland are great believers in the indoor meets, but at the present time we find it is nearly impossible to find indoor wood, indoor rubber and microfilm. We believe that if these necessities were made available that the number of indoor meets would increase."

"I had the pleasure of attending the Nationals and was at the indoor meet. To say the least I was very much disappointed in the number of contestants—also in the number of spectators present. Our local indoor meets are much better attended by both contestants and spectators."

Standard (Continued on page 97)



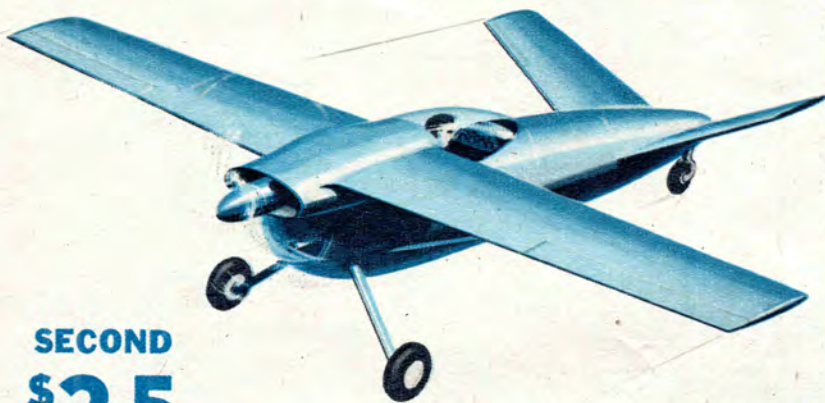
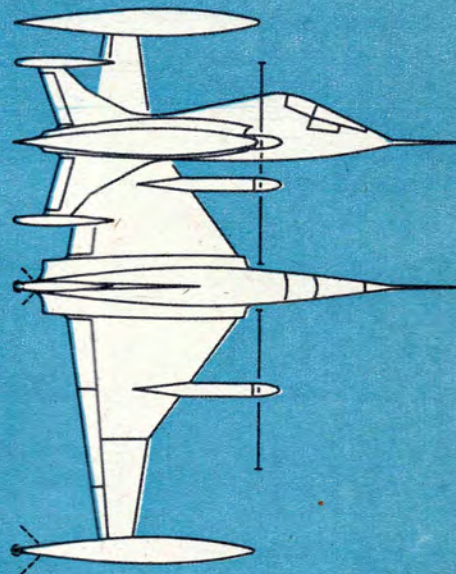
First in open class stunt at Nats was Don Still with modified Ju 87-B Stuka. Fox .29. Duke Fox, who makes engine, beams.

AIRCRAFT DESIGN COMPETITION



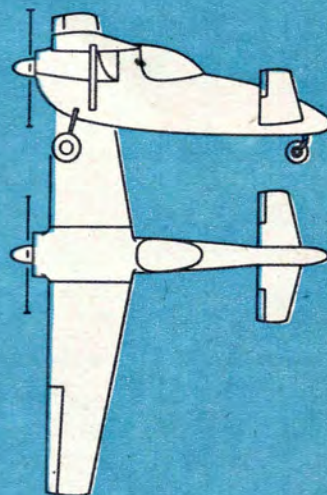
**FIRST
\$50
AWARD**

Twin turboprop VTO fighter by R. W. Flint of Bellflower, Calif. is also featured on this month's cover. It is powered by two 5200 hp turboprop engines buried in wings and driving propellers through shafts. 6000 lb. thrust rocket located in tail.



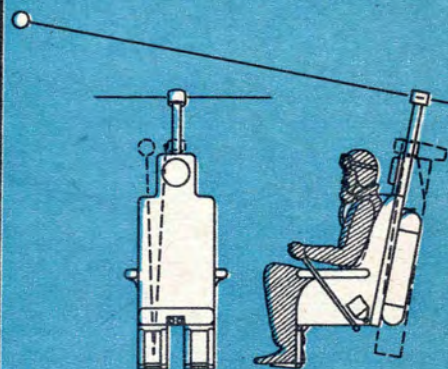
**SECOND
\$25
AWARD**

Canard lightplane by Bert Rochlus of Milwaukee, Wis. Butterfly ruddervators have variable angle of incidence to facilitate spin recovery; dihedral angle also improves turning characteristics of ship. Powered by 90 hp engine, top speed 127 mph.



**THIRD
\$10
AWARD**

Helicopter ejection seat by Joe Jennings of Glen Allan, Miss. Instead of being lowered by parachute after bailout, pilot can virtually fly away from his damaged aircraft with this device. Two 45 lb. thrust pulse jets. Range 125 mi.



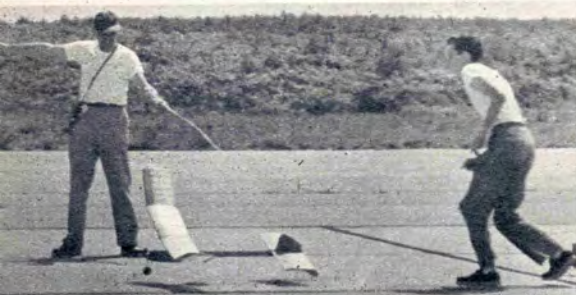
Rules governing this "aircraft of the future" competition are as follows: Three-view sketches of the envisioned aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views. Give sketches of the complete airplane or space craft in three-quarter front and rear positions. Photos of a model of the proposed design may be included. Informa-

tion on the powerplant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed by the editors and judges. The design may be of any type; space craft, commercial, military planes (fighters, bombers, troop transports), planes for the private flyer and sporting

or racing airplanes. The entry each month judged the most practical or of the greatest significance will receive an award of \$50; \$25 for second place and \$10 for third. Mail entries to Airmen of Vision, c/o Air Trails HOBBIES for Young Men, 304 E. 45th St., New York 17, N. Y. The editors regret they cannot enter into any correspondence on submissions.

WORLD MODEL

Wheeley Wins F.A.I. "Gas" for U.S.A.



Power plane champion Carl R. Wheeley of Washington, D. C., scored a total of 844 out of a possible 900 points with his distinctive design (in air, just taking off, above).



Second place honors went to Silvio Lanfranchi flying for Switzerland whose technique left no doubts that each flight was "unassisted rise-off-ground." Score: 831 pts.



Member of last year's F.A.I. power team also, Mr. Wheeley has a distinguished record in U. S. competitions. He is the technical director of the Academy of Model Aeronautics, edits AMA's monthly "Model Aviation." Design follows his "Senator" and "Little Senator" planes.



U. S.'s Joe Elgin fires up English entry which he proxy-flew for Ron Moulton; plane is an Amazon 444, designed by Mrs. Stan Hill. Great Britain scored 1,533 points; U. S. was first with 2,404.

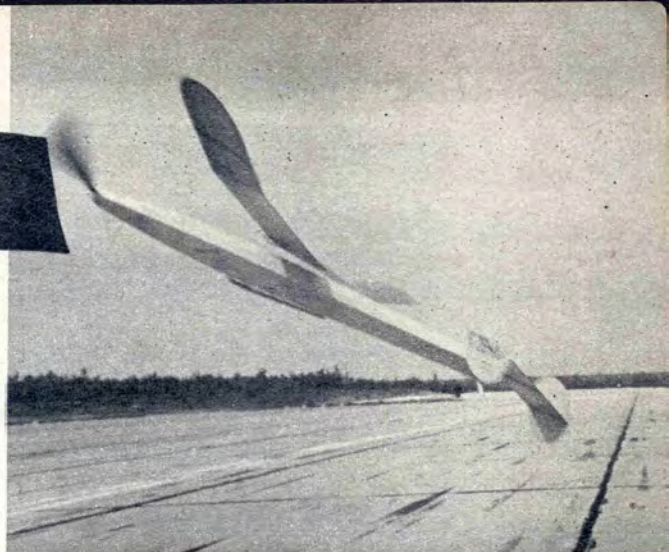


Defending champ Dave Kneeland of Hickman Mills, Mo., put up fine performance to take 3rd (783 points). Combined Wakefield and F.A.I. gas events were sponsored by Convair, aircraft manufacturers.



AIR OLYMPICS

Australia's King Tops Wakefield



Considered Australia's best modelplane flyer, Alan King of Victoria won the Wakefield event with a perfect score of 900 points (5 flights of 3 minutes maximum each); he had to use a spare model for his final flight. Proxy flyers took 2nd for England, 3rd for Australia.



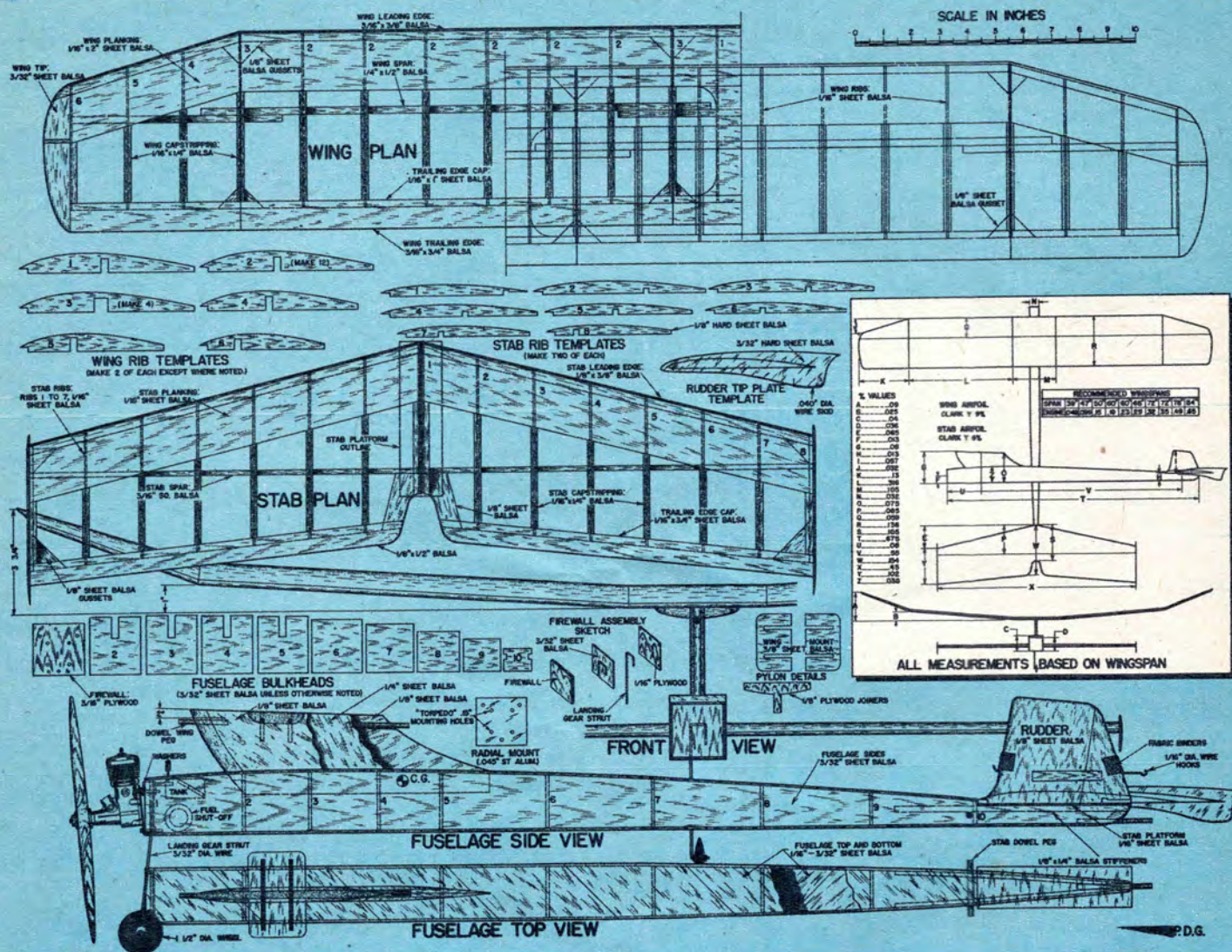
Hands-on-knees stance assumed by Robert Dunham, Tulsa, outstanding rubber flyer from Southwesf. Bob was 5th to help U. S. team take 1st in group flying with 2,404 pts.



System for winding rubber motor outside the fuselage (which is guarded by a shield) was devised by Andrew Bobkowski from Guatemala. Guatemala team was eighth in both power and rubber.



Underpowered but undaunted was entry flown in person by Kiyotatsu Miyoski representing Japan. Assigned as his helper was the noted West Coast photographer and modeler Fudo Takagi of Convair.



AIR FORCE'S TOP FREE FLIGHT DESIGN:

All-Class "NEPTUNE"

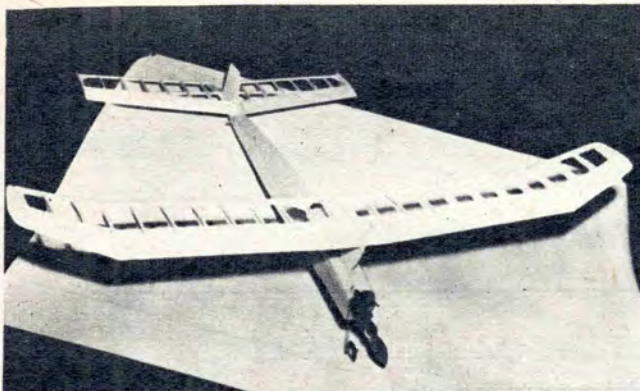
By S/SGT. AL ST. CLAIR

3536th Maintenance Squadron, Williams AFB

■ Even the man with the very short memory can recall times when a model builder in the Air Force had to undertake his construction atop a foot locker, if at all. Standby inspections, lack of sufficient space and fire regulations made model building nearly impossible.

But a look by the Air Force at the engineering potential which lay dormant in these frustrated modelers changed all that in recent years. The Air Force has climbed aboard the model aviation bandwagon with its own series of model airplane contests. From the results of these contests team members are chosen to represent the Air Force at the National airplane contest. Not only that, but most Air Force bases today have model clubs, shops to build in and materials readily obtainable.





Craft can be built in eight variations to accommodate 10 different engine sizes—from .049 up to .65 cubic inches displacement.

Early in 1951 word was received that airplane contests would be held for Air Force personnel. At the time I was stationed at Sheppard AFB, Wichita Falls, Texas. Upon looking over my own contest models I found it necessary to build a new Class B free flight, as I was not satisfied with the one I had. Finding no kits available which filled my needs, I decided to build an original job. The model I wanted was one that would fly consistently under all weather conditions, one I could count on to fly the same every time.

After much deliberation and the study of as many articles as were available on free flight design, I decided to try to couple a fast climb with the floating glide of a towline glider. And after much travail, the model itself was ready for testing.

It was a cold afternoon early in the month of February when the as yet un-named model took to the blue. The wind was blowing at approximately 15 mph when we arrived at the field. Rather than risk testing the new model under the conditions present I decided to stall for time in the hope that the wind would diminish. Three hours and as many crackups later, feeling lower than the bottom barnacle on Beebe's bathosphere, I threw caution to the winds. Upon release the model climbed in a rapid right spiral for 15 seconds and recovered perfectly into an exceptional glide. Fifteen minutes later it landed gracefully in a pasture some seven miles from the base. The ensuing discussion gave birth to the name. Quipped one Cliff Cox, "That tail looks fishy," hence "Neptune."

Since that day *Neptune* has undergone many modifications and has been flown in many classes with exceptional results. It has been largely responsible for my being on the Air Force Team for the last three years and was the big reason for the tie between Tommy Baker and myself for the Air Force Championship back in 1951.

At McClellan AFB, while attending the Pacific Coast Conference eliminations, *Neptune* managed to snare the sweepstakes for me with a first place, four second places and one third place.

Complete construction details are available on the full-size plans.

Full-size plans for ".15" Neptune are part of Group Plan #1154, Hobby Helpers, 770 Hunts Pt. Ave., New York City 59 (50¢).

Air Force's interest in modeling is reflected in this remarkable winning design developed during off-duty hours in base hobby shops



Sgt. St. Clair's early success with his *Neptunes* came when he flew as a member of the Sheppard AFB Tailtwisters Club.

**You run out of superlatives when
you see this car swoop by; build your
own Berlinette—save \$29,198.75!**



MODEL THE PEGASO

By JOE H. WHERRY

WORLD'S FLASHIEST CAR

■ Imagine rocketing from a standing start to 60 miles per hour in just 6 seconds, or dashing along at 80 mph in third gear with two more higher ratios in reserve and you have an idea of the jet-like performance at your control when seated in Spain's bid for top automotive honors!

Hand-crafted aluminum body by Touring of Italy, a very rigid though lightweight chassis and V-eight engine with compression ratios as high as 9 to 1 and horsepower up to 250, and De Dion type rear axles with universal joints permit this fantastic performance. Of course, that little item of price is the stickler: something like \$29,200 for the little gem we have modeled. The one model of this Berlinette produced thus far now reposes in the possession of General Rafael Trujillo, ex-President of the Dominican Republic and now his country's representative to the United Nations.

Two persons are carried in lush comfort in this powerhouse whose power to weight ratio is about 10 pounds per horsepower. Beneath the bulbous transparent rear are secreted the spare tire and wheel and tools. Back of the front

seat is space for baggage while the thick door panels each contain complete traveling kits. The array of instruments includes such modern unknowns as manifold temperature and pressure gauges. Under the hood there are four carburetors and a big supercharger.

We had the fun of driving one of the five Pegaso models to be imported. Brother, it gives you the feeling of riding a skyrocket! Roadsters and more conventional appearing coupes are included in the line, but for sheer elegance, this Berlinette takes the cake.

Certainly worthy of the scale modeler is the Pegaso. We recommend fairly soft balsa for the body. The wheels are a new product and very reasonably priced by Rod's Wire Wheels; hobby shops will have them, and in a variety of sizes.

Two types of construction are suitable: the sandwich type using six separate blocks of balsa (A, B, and C) which can include the streamlined top—or the top can be a separate piece if you wish; secondly, single block method can be utilized, but this entails much difficult carving. In any event, use the cross-section templates after rough carv-

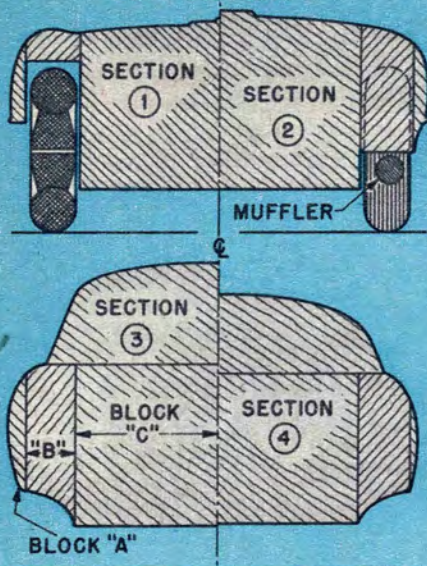
ing and during the sanding process. The radiator air scoop is best hollowed out and then trimmed with a small X-acto blade. Small balsa scraps are used on the single vertical and horizontal grille pieces. Bumperettes and tail lights and exhaust pipe and muffler (one on each side) are carved finally and cemented in place, preferably after much wood filling and final color coating.

The model pictured was built by Tom McClung, a Remington research technician; he used Reynolds aluminum foil to line the edges of the headlight tunnels, for the fuel tank filler cap, and for the window "chrome" trim.

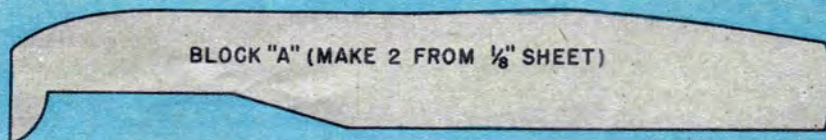
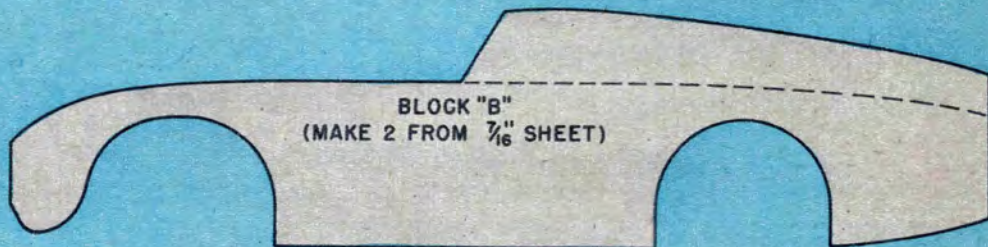
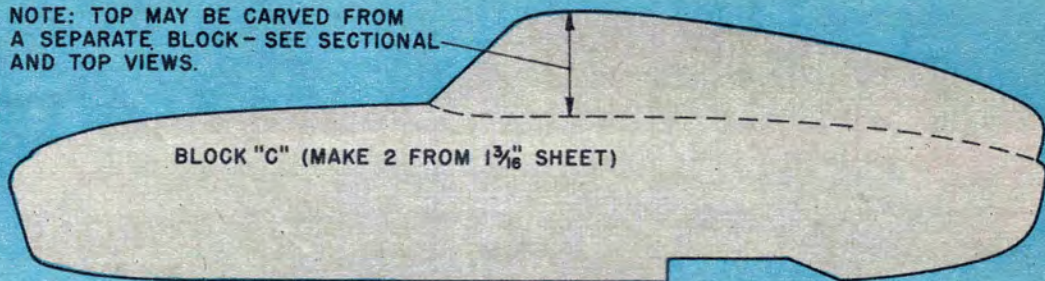
Car model enthusiasts have the opportunity, here, to use their creativeness, especially in the paint department: the real prototype had an orange-yellow finish which gradually darkened to a deep peach tone around the edge of the hood and around the bottom of the sides.

For those scale fans who may be interested, here are the most important vital statistics: wheelbase 92 inches, tread 52 inches, weight around 2500 pounds, turning circle diameter 31 feet, and maximum power 250 bhp at about 7,000 rpm.

— BODY SECTIONS —



NOTE: TOP MAY BE CARVED FROM A SEPARATE BLOCK - SEE SECTIONAL AND TOP VIEWS.



Full-size plans for Pegaso Berlinette on Group Plan #1154 from Hobby Helpers, 770 Hunts Point Ave., New York City 59 (50¢)



— SCALE IN INCHES —

SIDE VIEW

FUEL FILLER OPENING ON RIGHT SIDE

BUMPERETTE

1/16" SHEET

AIR SCOOP (1/16" SHEET)

TAIL LIGHT

AIR VENT

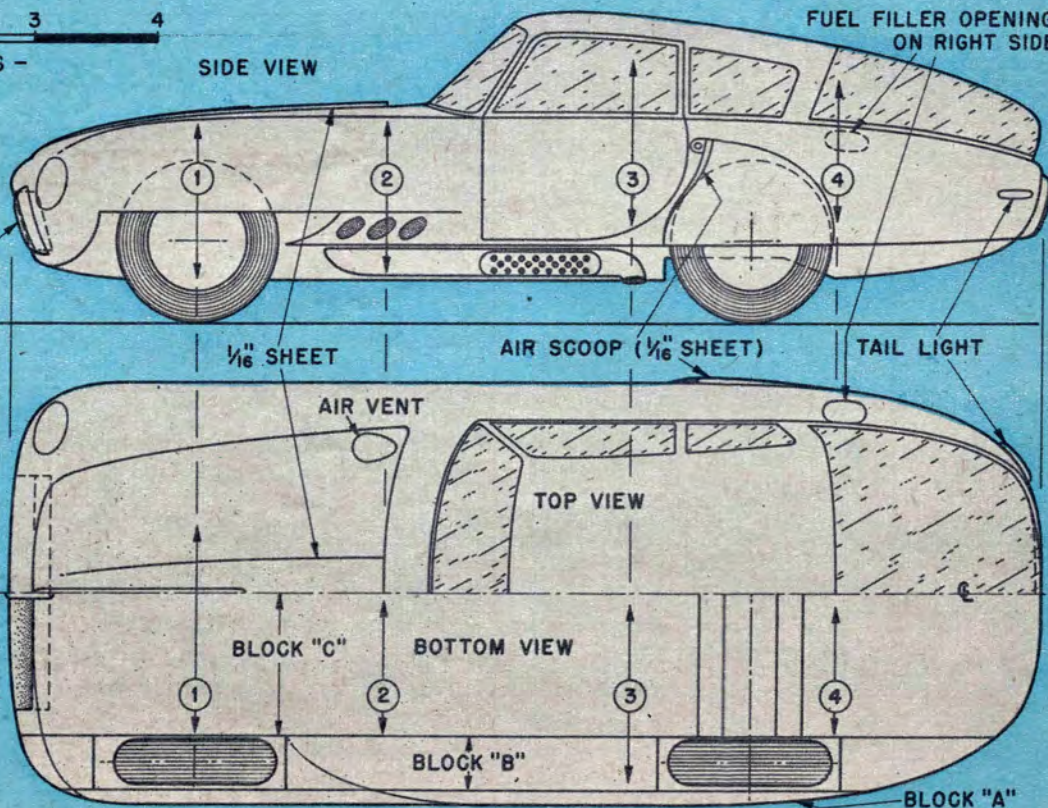
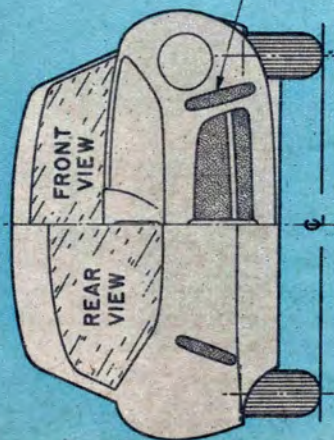
TOP VIEW

BLOCK "C"

BOTTOM VIEW

BLOCK "B"

BLOCK "A"





From the city



...to the country



...up mountains



...and down dale

"ATH" TAKES YOU ON THE

Yankee

"MONTE CARLO"

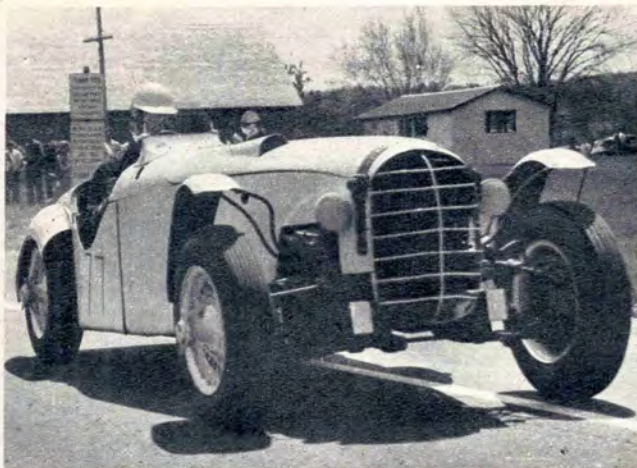
■ "Alley Pond starting line . . . odometer reading 0.0 miles . . . Left out of parking lot, right at . . . 0.05 miles . . . Your average speed is 20 mph for 9.3 miles"—that was our navigator and photographer Berni Schoenfield reading from the right seat of our MG as starter Ed Witalis gave us the "Go" signal. We were on our way, running in the Yankee Monte Carlo Rally, an annual event sponsored by the Connecticut Sports Car Club and one of the most popular sportscar meets in the East. Occupying an entire week end, the Rally winds through some 280 miles of picturesque New England countryside, ending up in a hill climb. Its basis is the European Rallye de Monte Carlo whose participants start from different countries all bound for the famous gambling capital of the Monaco Principality.

A rally is primarily a test of navigational skill and not a speed event. The route laid out leads through back roads as well as main highways and is never the shortest distance between two points. The route sheet is not a map, but a set of directions which tell you to turn right or left, either when your odometer reads a certain figure or when you come to "farmhouse with green shutters." Your navigator must be sharp. Frequent check points ascertain whether you have kept a prescribed average speed, whether your mileage is correct and whether you arrive on time. Any deviation is subject to loss of points.

At the same time as our car left Alley Pond Park, Long Island, others were starting from New York City and Southport, Conn., bound for the first overnight stop at Pittsfield, Mass. From this rendezvous, early next morning, the cavalcade of 52 cars took off for the finish line, at the foot of Mount Equinox in Manchester, Vt. Here those who were entered in the next day's hill climb were given a chance to polish up their skill on the 6½ mile long, steep, Skyline Drive. That night, a sumptuous banquet with a barbecued side of beef was held at a nearby inn, and the thrilling hill climb of the following day culminated a perfect motor sports weekend.

Where is he? Hill climb steward W. F. Procter (left) checking on a missing car, lost halfway up Mt. Equinox. Right: local "hams" kept track of hill climbers.





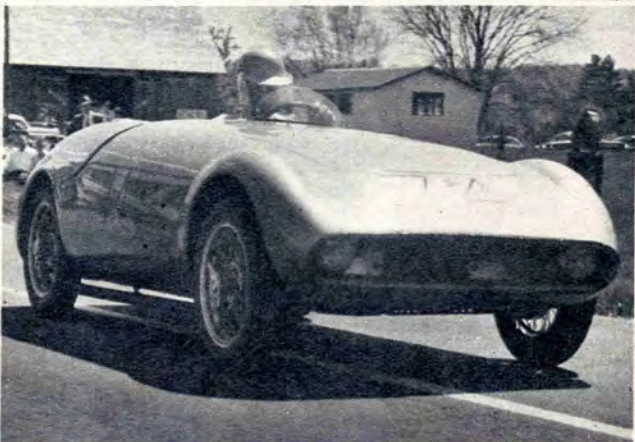
Jaguar Special owned by Fred Nemeth. Participants were given two chances at hill climb, the fastest run counting towards score.



Owned by Henry Rudkin of Norwalk, Conn., the diminutive Crosley-powered Italian Bandini is dwarfed by the driver: he's 6 ft. 4 in.



Overall winner of hill climb, John Meyer, Great Neck, N. Y., and his Cadillac-powered Special established new record, 5 min. 18 sec.



Candy Poole of Hartford, Conn., in his Crosley-powered PBX, built by Aeroform Co. Did 6 min. 42 sec. up 3200 ft. of Mt. Equinox.



Second-place winner in MG class, Bennington College student Valerie Witalis. Up hill in 8 min. 27 sec. despite injured hand.



ATH's MG stops at first check point out of Pittsfield, Mass. Checkers Mr. & Mrs. Doug Morgan fill out Technical Editor's card.



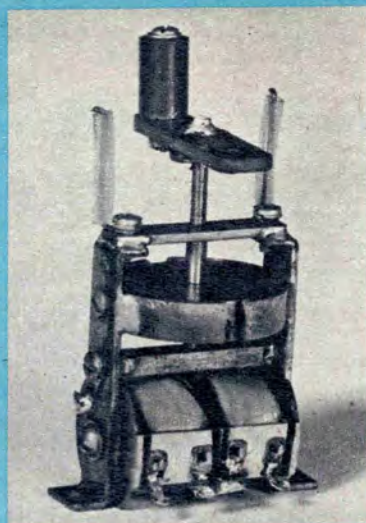
A rare specimen. The British Delow owned by D. O'Connell. Has English Ford engine, and is specially built to negotiate hills.



Chow break. Crew of Jag Special relax in pit area just before climb. Here all technical inspection of cars was conducted.



Latest version (left) has more efficient coil design, is somewhat more compact and lighter than earlier experimental type (rt.). Weight hasn't yet been attached to end of control arm (away from camera).



"Mactuator"

**A MORE EFFICIENT MAGNETIC
ACTUATOR FOR RADIO CONTROL**

By HOWARD McENTEE, W2SI

■ There is little to add to what George Trammell had to say about proportional control in the Jan. '54 issue, and the equipment he described will give fine results. However, for some time we have wondered just how efficient the style of actuator that George showed might be, and how it compared to a heavier and more complex type we have been using. Finally, curiosity got the better of us and test equipment was set up to find out the answers.

There is no doubt at all that George's "simple design" is indeed the simplest and lightest we have seen to date which will do a decent control job. However, the design does not lend itself well to what is known to be the best form of the magnetic winding. Let's digress a moment and outline what factors affect the amount of twist you get to move the rudder—or in other words, the torque that the actuator can produce. First and foremost, of course, is the current you put through the winding. The resistance of the winding is also important, in that it settles how many volts you must have to get a certain current. Thus, a low resistance winding should give higher torque than one of higher resistance, provided the same current is put through in each case. It does, too, but there is another factor we have to consider—the number of turns.

Actually, magnetically operated devices depend for the power they can put out on the "ampere-turns," or the product of the number of turns on the coil by the cur-

rent in amperes going through them. Now to cite some figures, we have recorded: if you take a certain core and wind 700 T. of No. 30 wire on it, you will get a certain value of torque. In this case, the turns times the milliamperes (we use ma. here, as a more handy figure with which to work) is about 81, since the test coil showed a current of about 116 ma. with 1.5 V. If the coil was rewound with 600 turns, and then with 500 turns of the same wire, each time the ma.-turns would come out about the same, and the torque would be the same.

The core of this coil happened to be rather short, so the coil got pretty fat with the 700 turns. The last turns put on were of large diameter—which meant that they added a lot more resistance than turns close to the core (which were much smaller in diameter) but each outer turn had just about the same effect in producing magnetic flux in the core—which was translated to torque at the shaft—as had the small diameter inside turns. The answer to this, then, is to make the coil long and skinny, if you can; all the turns on such a coil will be relatively small in diameter, and you can get on a lot of turns before the resistance gets too high.

The actuator shown in the smaller photo is a type which has been proven to give very efficient results; it gives a lot of torque for a moderate amount of power put in. It is of the two-winding type, which is used with a single battery in the plane (see circuit drawing—note how this differs from that on P. 53 of the Jan.

'54 issue). This means that we had only half the total winding space to devote to each coil. It was on this actuator that the above windings were checked; it has been used with a single 1.5 V. cell, to give plenty of rudder movement in a fairly fast 54" plane.

Pursuing the idea of a long thin coil as the ideal, we tried out the design shown in the larger photo, and in the drawings, and found that it really has it all over the earlier unit, even though the latter has a larger magnet, draws higher current, and weighs quite a bit more. It will be seen that the latest design has the long coil—in fact there are two of them, one for each direction of pull. These coils were each wound with 950 T. of No. 30 en. wire, giving about 11 ohms, and a current of about 120 ma. on 1.5 V. We have, then, a ma.-turns rating of 115, so we would conclude that this unit should be a lot better than the earlier unit.

Unfortunately we could not compare them directly; it is most difficult to compare several different actuators on any simple basis, since many other factors besides ampere-turns enter into the deal. For example, the size of the permanent magnet, how heavily it is magnetized, the spacing between magnet and polepieces (in this particular style of actuator) and so on. Despite the fact that the new unit has only a 1" x 3/16" magnet (the old one has a 1" x 1/4" disc) and weighs considerably less, due to the use of thinner iron in the entire unit, it actually does show more torque than the old job. In

definite figures, the new one showed a maximum of .300 inch-ounces, as against .260 for the old. Torque, incidentally, is measured in such multiple units as inch-ounces or foot-pounds; this is simply the product of the amount of pressure (measured in ounces) times the distance from the center of the shaft that the pressure is measured.

As a matter of interest, an actuator of the sort described last January, with a $\frac{3}{4}$ " x 1" magnet and a winding consisting of 385 T. of No. 28 wire (which gives 220 ma. on 1.5 V.—hence an ma.-turns figure of 84.7) gave a maximum of only .115 inch-oz. torque.

We have given a lot of figures here, to try to show those readers who make their own what they might expect, or so they can learn why a given actuator does not come up to expectations. When considering the various types of these units, there is another consideration: what position should the arm have to get the most effect for moving the rudder? What we call the "simple" type (Jan. '54) gives the highest pull on the arm when it is in position (A) with the power applied to give rotation in the direction indicated. This type shows somewhat better torque over a wide range of rotation than the one described later; it had the same torque at the positions shown in (B), namely—.095 inch-oz. Hence, it could be used with a control arm which moved almost 90 degrees, to get the desired rudder movement.

The type shown in the smaller photo has a more limited movement; greatest

torque comes at about the position (C)—while torque values for other arm positions are shown in (D). Thus, this one should have the arm movement limited to about 30 degrees each side of center, or even less.

One final thought before we get into construction. This concerns the matter of "centering"—that is, the tendency of the arm to return to center position when the current is cut off. This is an advantage in many respects, as it means that the rudder will tend to neutralize if something goes wrong (such as a dead actuator battery or broken lead in the actuator circuit). The "simple" type has no centering action at all; however, it is easy to make this type return towards center by just placing a very small bar magnet at the rear of the unit. By turning the magnet, the arm may be brought to exact center when no current is in the coil. You should not go too far in this matter of centering, though; it takes power from the battery to overcome the centering magnet, and furthermore it is better to have the rudder not go all the way back to neutral, should something happen during flight, for then the plane will tend to circle rather than take off in a straight line.

The "iron polepiece" actuator has an inherent centering action that depends upon many factors; the closer the gap between polepieces and the heavier the iron in the core and other parts, the less centering you will get. Centering may be increased by putting a slight airgap in the core, such as at point X under "Pole-

piece Assembly." Just insert a thickness or two of paper. However, this action will cut the available power a small amount.

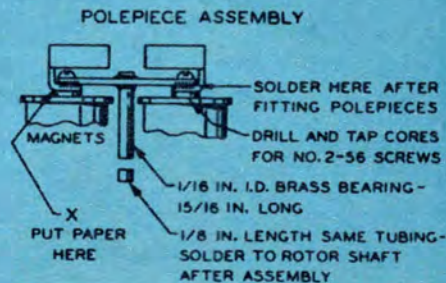
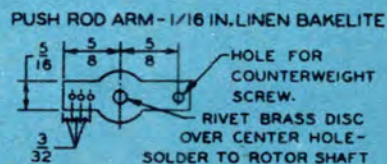
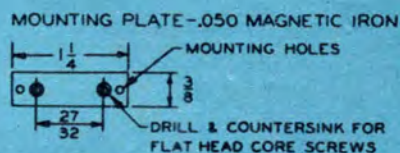
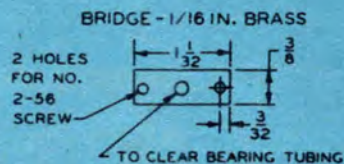
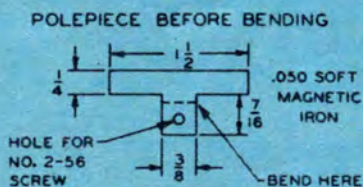
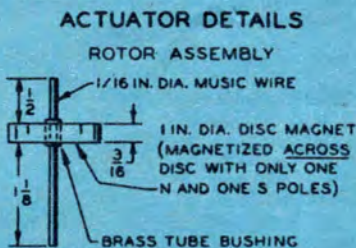
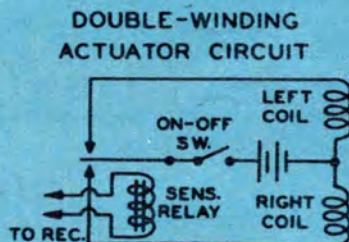
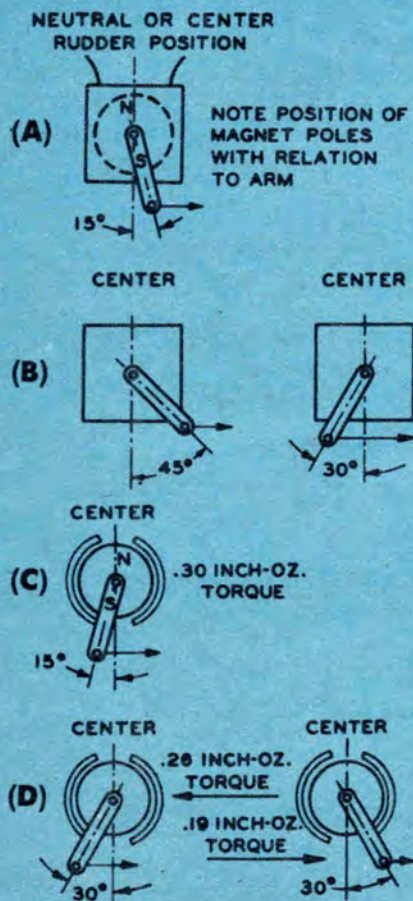
The unit shown under "Actuator Details" was made from iron salvaged from old relays. The iron used in actuators should be a good magnetic grade; plain cold rolled steel will work, but true magnetic soft iron is much better, and defunct relays and other magnetic devices are a good source. (Some of the R/C suppliers sell magnetic iron in small quantities at low prices.)

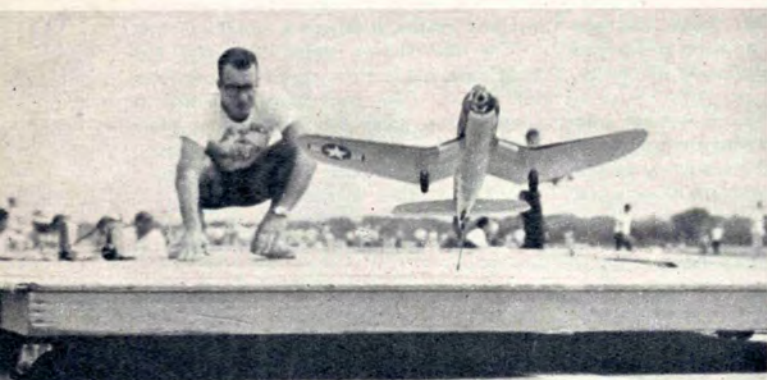
The first step is to mount the magnet on its shaft, making sure it doesn't wobble as the shaft is turned. The magnet specified has a $\frac{1}{8}$ " center hole; a piece of brass tubing was found that would fit this hole and had a $\frac{1}{16}$ " hole for the music wire shaft. The whole assembly was fastened together with solder, using a bit of acid flux.

The polepieces are cut from flat stock, then bent around a 1"-diameter rod. After they are bent to fit around the magnet—with a clearance of $\frac{1}{64}$ to $\frac{1}{32}$ " all around—the lower end of the "T" is bent inwards and drilled.

The bridge (of brass, *not* iron!) should be made a trifle long—about a thirty-second at each end. Drill the center hole and solder in the bearing tube. Then drop the rotor in place and trim the ends down till the polepieces have the proper clearance. When they do, fasten them to the bridge temporarily with nuts and bolts, and solder this assembly together.

The coils were wound on bobbins taken from commercial (Continued on page 69)





Bob Hodges' Vought Corsair is racked up in a steep climb in Navy carrier event; 2-speed (exhaust choke) K&B .35 took 5th in Senior. Senior man Dave Domazi scored top points, 417.4.



For second year in row Parnell Schoenky, Kirkwood, Mo., flew off with Hiller Helicopter event. This original design used a Cub .14 engine. Canadians Graves & Stefani placed second.



PAA-Load event was run off in drizzle. Unusual 700 sq. in. wing entry by Dick Burges had plug-in wings. In Clipper Cargo Herbert Kothe, first PAA-Load champ, lifted 25½ oz. to win.

Photo Report from Chicago on the 23rd Annual Event National Modelplane Championships

Pictured by JOHN W. SCHNEIDER



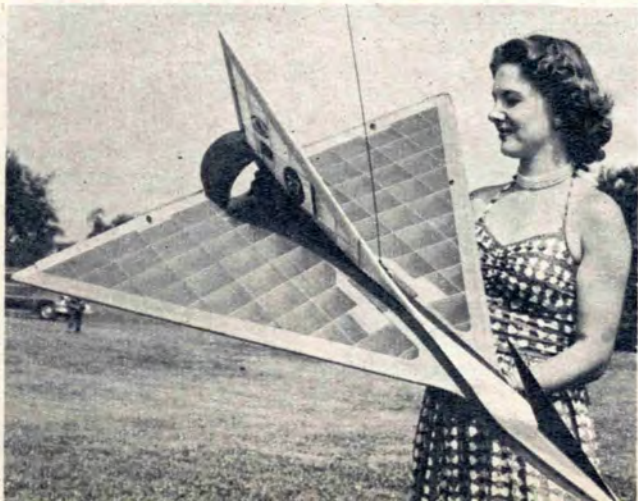
NATIONAL CHAMPION: Willard S. Blanchard, Jr., 30, Hampton, Va., also won Open class (over 21) honors in '53. "Woody," an aeronautical research scientist, is well-known contest flyer.



Tops in Junior stunt: Rodney Pharis, Detroit, with 346.5 pts. His magnificent original precision aerobatics entry had Fox .35. Top points scored by C. Hill Hutchins as a senior—352.

■ Ranking first in size, number of events and interest, the 23rd annual running of the American air-model championships drew more than 1,500 entrants to Chicago's Glenview Naval Air Station. The 1954 "Nats" were sponsored by the National Exchange Club with the U.S. Navy acting as host. Events were sanctioned by the Academy of Model Aeronautics and run off under the supervision of AMA personnel. When the last of the 78 different age-and-category events had been concluded the new National champ was Langley Field's "Woody" Blanchard. Junior championship honors went to Joe White of Sacramento (brother of last year's champ, William White); the senior champ crown was awarded to William Gelvin of Topeka. Some free flight events were conducted at the Chicagoland Airport; indoor flying took place in Chicago's 132nd Infantry Armory. For the first time the big competition was compressed into a 4-day schedule. An estimated crowd of 200,000 attended the contest on its final day to see an air show which included Navy's famed Blue Angels jet team.

Most unusual radio entry: Ed Sieh's 60 deg. delta with span of 42 inches. Area is 764 sq. in. Good tone receiver; 3¼ lbs.

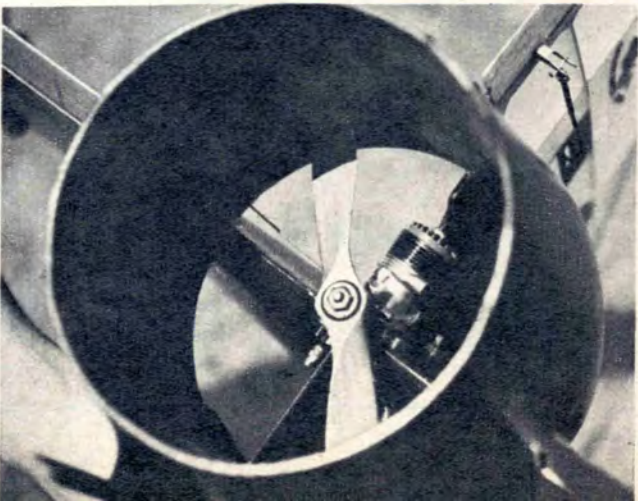


Repeating his '52 victory, Alex Schneider, San Francisco, won radio control with modified Piper Cub, 7' span, 8 lbs., 18 oz. loading, Spitfire .60 ignition. Rockwood 5-channel reed rig.



Duplicating his 1st at the '54 Mirror meet, Bob Yeomans of W. Haven, Conn., scored highest (329) points in C/L Scale with 5' span, 1/20th size P2V-2 Neptune. Uses two Torp .29's.

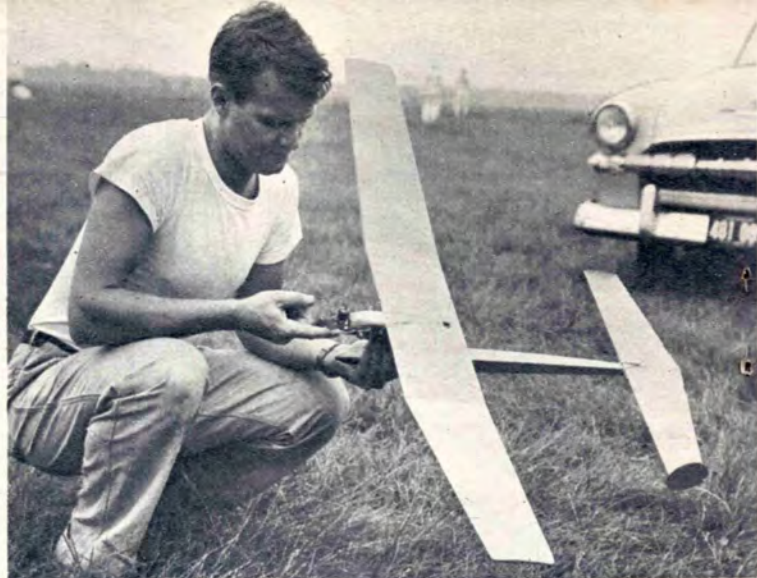
Shrouded K&B Torp .15 powered this dart. That's Ed's missus Catherine; both beauties. At moment only rudder control used.



NATIONAL MODELPLANE CHAMPIONSHIPS



No. 1 nominee for any young-in-heart award, C. O. Wright, ex-AMA prexy and Topeka's most famous modeler, was 5th in Open class free flight Half-A scale with .049 Atwood Taylorcraft.



All-balsawood construction utilized by Dick Burger, Piedmont, Cal., for McCoy .049 diesel free flight. High thrust line Half-A weighed 5 oz. Sparless 1/32" sheet wing, ribs 5" apart.



Renowned patience of indoor flyer is exemplified by Carl Rambo, Oakland, as he repairs large hand-launched stick model. Highest in event was Richard Obarski who totaled 20 min., 45 sec.

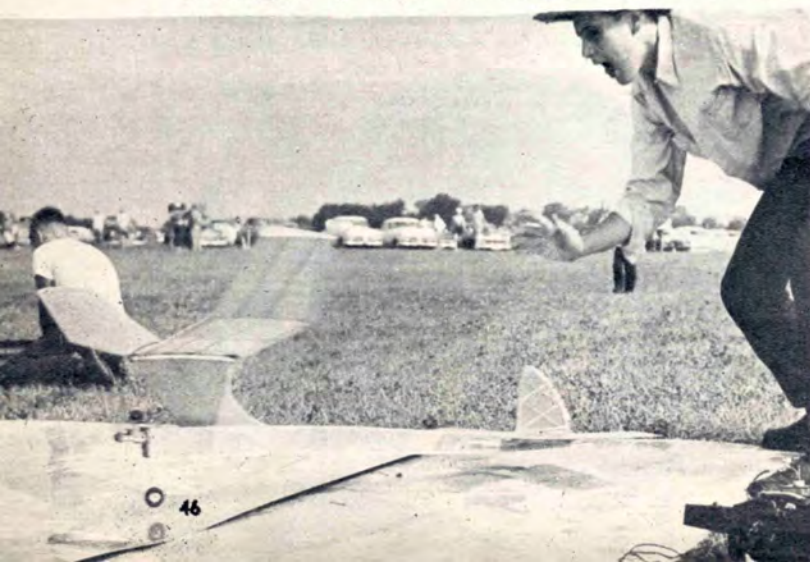
New national junior champ Joe White of Sacramento launches his Torp .19 powered "Whogit" Class A free flight entry. This model was designed by brother Bill, last year's National Champion.



Young Greg Wilson from Cedar Rapids, Iowa, had Half-A free flight delta modeled along lines of Ed Sieh's R/C job (see pg. 45). Powered by a Thermal Hopper running backwards.

■ The first air-model Nationals to be held in Chicago since the 1940 and 1941 championships, this year's competition produced its usual quota of unusual designs and innovations. Even though a good many top models were those that had appeared before, original designs still were noticeable enough to make an impression on any observer. Radio control flying drew its biggest entry list ever; this produced some difficulties because the R/C flyers, like everyone else, had less time in which to establish official flights. As is its annual wont, the question

First place in Combined Class A-B PAA-Load went to Bruno Markiewicz of Detroit who flew this Torp .32 powered original design "Polywoa" to total time of 13 minutes, 48.4 seconds.





Ten-foot, 13½-pound Buhl Bull Pup flying scale radio control by Hubert B. Lacey, Columbus, Ohio. O.K. Twin motor, 18/9 prop. Five channel Schmidt; rudder, elevator, motor control.



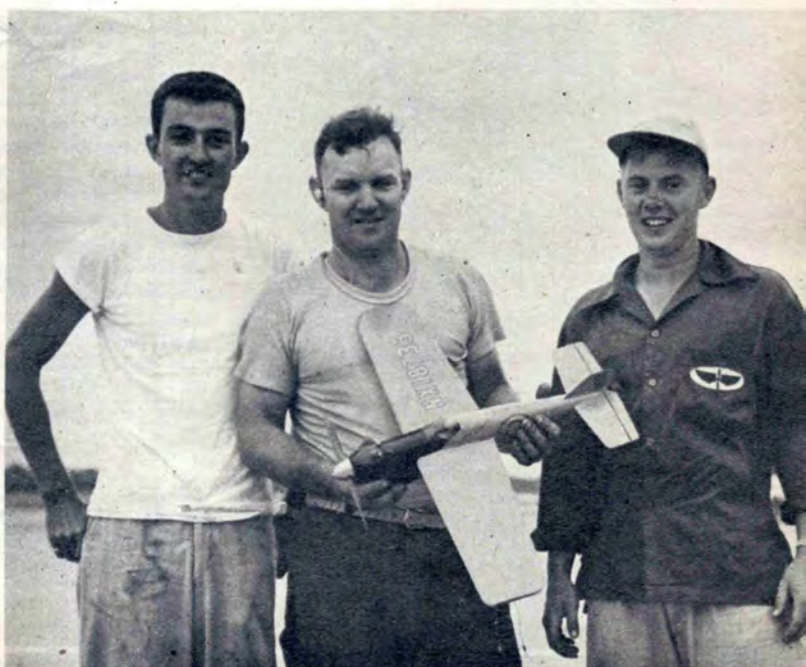
Duplicating his 1953 victory with the same model, Ed Stoll of Detroit placed 1st in open class Half-A free flight scale. This is a Fairchild 24 powered by Wasp .049. Total, 344.5 pts.



Nordic towline glider crown was won by James A. Patterson of Holloman Air Force Base, New Mexico, who flew as Air Force team member. His total time was 13 minutes, 36.1 seconds.

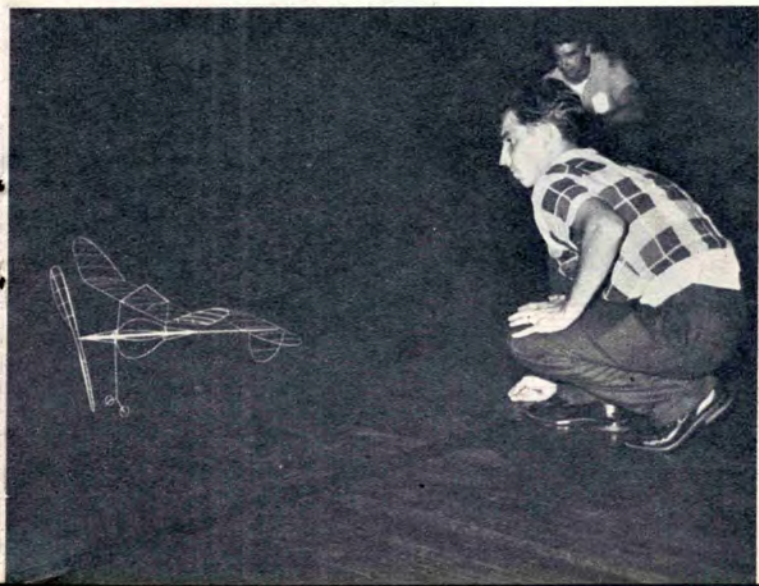
arose as to whether or not the contest has become too cumbersome because of its large number of events. But as long as a sponsor and a suitable flying area are available any suggestion to trim the categories does not get very far. Again this year leader members of the A.M.A pitched in to conduct events. Among those most active were Pete Vacco, Leon Shulman, Ernie Kratzet, Warren Bartlett, Carl Goldberg, Al Davis, John Hillegas, Keith Storey, plus countless others. Technical details will be reported in Air Trails Model Annual.

Best of indoor cabin contenders was Bob Bienenstein, Detroit, with 14 minutes, 25.2 seconds. This more than tripled the highest Jr.-Sr. time, indicating "indoor" flying is on wane.



Winning team race trio was (from left): Bill Hallenbach, mechanic; George Moir, designer-builder; Bob Huffer, pilot. Re-worked Fox .29. Huffer, Annapolis, Md., won last year.

Rise-off-water free flight saw top time of 16 minutes, 50 seconds racked up by Sherman Kachenberg. Here, Robert Stucker, St. Louis, 5th in senior, demonstrates real "sincere" launch.



TRIPLE
WINNER!

First at the Nationals!

First at the Internationals!

"Squeaker" SPEED PLANE

"Mr. MPH" himself, America's most consistent control line speed model winner and record holder, unveils his prize job; this Cl. A won everything!

By TOMMY BAKER



Quiet, unassuming, capable Tommy Baker from Kings Mountain, N.C., went into Air Force as dental technician, served overseas, now runs AF recreation program at West Palm Beach, Fla. Married, he and wife Beth have one youngster. At most recent National Model Plane Championships Tom, as "open" contestant, took 1st in Cl. A speed (130.19), 2nd in B (136.86), 3rd in A/2 (78.03).

■ The *Squeaker* is my latest effort to produce a stable, consistent contest winner. In a single contest season it racked up an impressive list of wins, taking first at the Air Force World Wide Championships with 130.37 mph, first at the Nationals with 130.43 mph, first at the Internationals, 133.28 mph. The flight at the Internationals established a new A.M.A. record. *Squeaker* also took second place at the 1952 Nationals, turning a speed of a little over 130 mph. This was its maiden flight. In every contest where it has been flown it has consistently turned in times of 130 mph or better. The most important thing in a fast speed ship is stability, in my opinion. This seems to be the theme of the *Squeaker*.

The ship is designed around a K&B Torpedo .19 which I believe is the hottest Class A engine to hit the market. Alterations of the Torp .19 are as follows: Turn the cylinder head and fins down to 1 1/2" diameter. This allows you to use a smaller, more streamlined cowling. Remove the needle valve and venturi restrictor and tap the needle valve body in the venturi with a 10-32 tap. Install a Dooling needle valve and body. The Dooling needle valve has a fine taper and the body is of the lock-nut type which allows a fine positive setting which is very important. Install a McCoy right-angle seat. This allows an easy fuel line hook-up in close quarters.

Next, go through the Torp and remove

all burrs and sharp edges that the fuel passes over on its way through the engine. Then comes the most important thing. Make certain the engine is entirely free of any binding, and is as free as possible. Binding and excessive drag create friction, and friction robs rpm, which all means lost speed. Above all do not alter the timing of your Torp in any way. The factory timing seems to be about perfect. In other words, don't make the intake port in the shaft any larger, and don't touch the top side of the intake and exhaust ports in the cylinder.

Another "must" is to keep your engine and fuel as free from dirt and lint as possible. If the engine gets dirty, tear it down and clean it up. Several turns of a prop on a dirty engine can ruin it, so keep 'em clean and make 'em last longer.

Assuming you have your Torp .19 and have turned the fins down, file off the exhaust stack just enough to allow easy cowling. Mount the engine in the half-pan. You can purchase a commercial pan and saw the back off or make a wooden half-pan as described in the plans. I used a metal half-pan on the original *Squeaker*. I like the metal pan best because it permits a rigid, more permanent engine mount, and also will dissipate heat much faster. The wooden half-pan is quite suitable, though, and is about as durable as any wooden pan. The maple crutch is tough and gives a tough surface on which to mount the engine.

Squeaker can take off from a dolly or be hand-launched. AF-man Baker prefers the .2-pin, 3-wheeled dolly shown, but says any good dolly serves if you can count on a perfect take-off every time.



First at Air Force World Wide Meet!



After you have the engine mounted in the half-pan, take a piece of hard, straight-grained balsa and mark off a center line and hole the engine will fit through. Glue a piece of 1/32" plywood to the surface that will lie along the pan and center of the fuselage. When dry, carve out the hole in top half of fuselage to be a snug fit around the engine. Now take the piece of wood to be used for the lower rear part of fuselage and cut to fit snug against the rear of the half-pan. Glue on 1/32" plywood former that goes next to the rear of the half-pan and tack-glue rear of fuselage to top half. Draw outline of cowl platform on top half of fuselage. With half-pan in place as a guide, carve entire fuselage to approximate shape and rough sand. Final sanding will come later. Split off back portion of fuselage that was tack-glued on and hollow entire inside of fuselage out to about 3/16" wall thickness.

The cowl comes next. Carve out the top outline of cowl top, and shape up inside of this block. Cut cowl sides from 1/32" plywood. Cut so that outside grain of plywood runs vertical. This makes it easier to bend around engine. Put engine and half-pan together in top half of fuselage. Carve baffle blocks to shape and glue in place. Now glue top and sides of cowl in place, leaving about 1/32" space between sides and engine. When dry shape top of cowl and air passages as indicated on plans. Make wing spar, carve

hole for spar in top half of fuselage and install. Drill holes for hold-down bolts. Make elevator, elevator horn and bar and assemble. Carve out recess in fuselage for elevator and install elevator and controls. Make rudder and install. Glue on lower rear portion of fuselage. Glue on fillets at base of rudder to cover control horn. Make shim-stock engine lug covers and glue in place.

Sand entire model with fine sandpaper. Give it two thin coats of clear dope to seal pores in wood. Sand lightly between coats to keep surfaces smooth. Cover all outside wooden surfaces with silk. Silk works best if used wet. Moisten silk with water, then lay over surface to be covered and smooth out. Brush dope on silk and rub out smooth. After all surfaces have been covered and have dried, sand very lightly to remove fuzz. Now give model four coats of thin, clear dope, sanding lightly between each coat. Make a mixture of about 50-50 talcum powder and clear dope and thin until mixture has almost consistency of water. Give all wood surfaces about five coats of this sealer, sanding lightly between each coat.

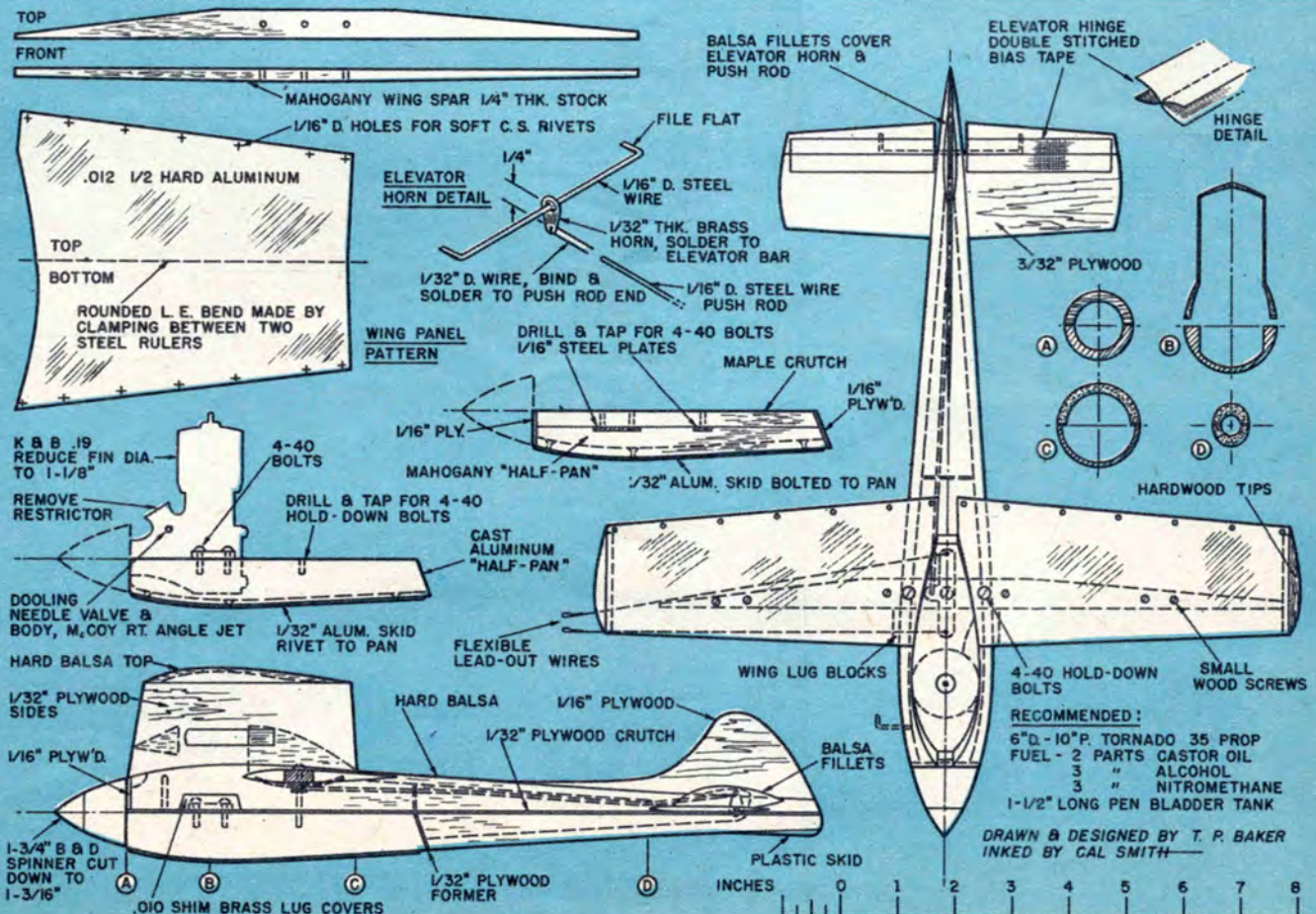
This sealer is the only fuel proofer I use on all my speed ships. This type finish is easy to maintain, too. If fuel, after a time, appears to start eating into the clear dope underneath the sealer, all you have to do to restore the finish is to sand lightly and give several more coats of the

sealer. A fuel-proof color finish can be used if you desire it.

Wings and lead-out wires go on next. Scribe outline of wing panels on a sheet of .012" half-hard aluminum and cut out. To bend leading edge of wing panels, either clamp aluminum between two steel rulers and bend or go to a sheet metal brake and bend panels to about a 45 deg. inside angle. Form panels from here to the desired airfoil by hand. Clamp trailing edge between two rulers and mark rivet holes. Drill holes for 1/16" diameter soft countersunk rivets. Cut rivets off so they stick through trailing edge about 1/32". Now find some smooth, hard surface and pound rivets over until flush with trailing edge.

Next, out of hard balsa, make the wing lug blocks so that they fit flush against fuselage and are a snug fit inside wing panels. Glue wing lugs onto fuselage so that they will hold the wing incidence parallel to the center line of fuselage. Wing, stabilizer, and rudder are all set at zero degree incidence with the engine and line of thrust. . . . All building details available on full-size plans.

Full-size plans for Squeaker are part of Group Plan #1154, Hobby Helpers, 770 Hunts Pt. Ave., New York City 59 (50¢).



TOP POWER *formance*

FOR YOUR STUNT, CONTEST, OR JUST-FOR-FUN



THE OUTSTANDING *All-Purpose* FUEL FOR EVERY

TESTOR CHEMICAL COMPANY • ROCKFORD, ILL.

...e...

R-FUN FLYING!



CAUTION
INFLAMMABLE
MIXTURE
DO NOT USE
NEAR FIRE
OR FLAME
N.Y.C. C/A 972

THE PERFECT AVIATION FUEL
FOR *All* MODEL ENGINES

A Product of
TESTOR CHEMICAL COMPANY
ROCKFORD, ILLINOIS

ERY STANDARD MODEL ENGINE...

ILLINOIS

How to become a trained Technician

gineer, he knows his two years at the institute will be accepted as credit toward it—for the school he attended has that kind of accreditation at certain colleges. However, he also realizes that his Associate degree from the institute is a worthwhile award in itself, that with his training he can climb the ladder to various kinds of supervisory jobs, enter interesting research. In short, as an aeronautical technician he is a highly desired member of the engineering team.

Technicians Urgently Needed

Last month, under the same title that heads this article, it was explained that the technician stands halfway between the skilled worker and the professional engineer. (Although there are other kinds of "technicians" such as medical, dental

Engineering aids and lab assistants are wanted! In this concluding article we present more information on the training necessary, pay and jobs available



L. I. Agricultural & Technical Institute

Aeronautical technicians will find ready openings in aircraft manufacturing plants, airlines and research and development work.

■ Everybody felt sorry for "T-Square" Webster. His one ambition had been to become an aeronautical engineer, and he had gained a scholarship that would take care of his college tuition. Then, just before graduation from high school, his Dad took sick. The doctor said Mr. Webster would have to be out of work for several years. Well, there wasn't enough money for T-Square to go to college, and his mother really needed him around the house.

Tough break? Sure. But T-Square didn't let it stop his train. He enrolled at a nearby technical institute for a two-year course in aeronautical technology, commuted thirty miles each day in his jalopy, and even arranged for a weekend job to help out the family budget. Today he's sitting pretty. About to graduate as an aeronautical technician, he's already had several offers for his services, the highest at \$100 a week. If he gets drafted, he's pretty certain of being put to work in his own line—and learning more about some mighty interesting airplanes, not to mention the possibility of guided missiles.

And if eventually he decides to go after a full degree as an aeronautical en-

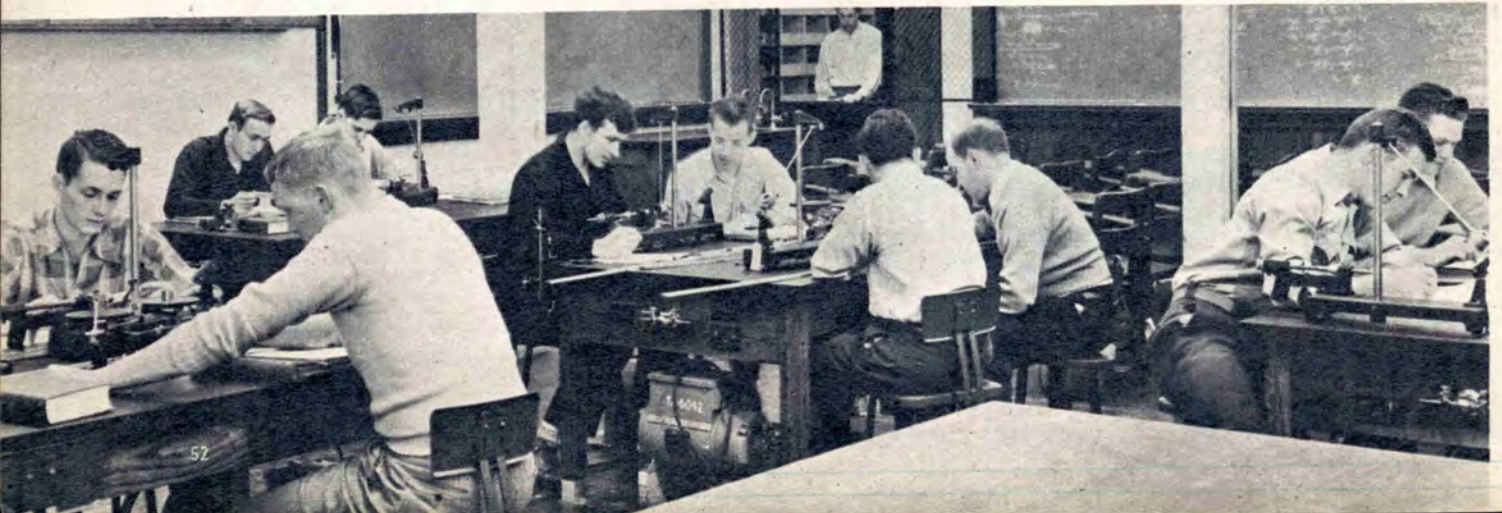
and the like, we are here concerned only with those in engineering and some allied sciences.) The training required, as compared to the four-year college course, is generally two years—though in some cases it may be up to three years. The fields embraced include electronics, heating, air conditioning and refrigeration, instrumentation, architecture and building construction and others which rate headlines in today's fast-moving world.

The demand for the "semi-professional" known as technician is staggering. According to one estimate, a total of 50,000 *professional engineers* a year will be needed in this country for the next several years, twice as many as are being graduated. One reason for this dearth is lack of trained *technicians*: many engineers at present must perform work that could be done by competent assistants now short in supply. Advances in research, new products and processes in industry, expanding government work, accelerated defense plans—all these are upping the call for technical manpower. **And five technicians are required for every professional engineer!**

But how do you become a technician?

Physics is a basic study in a number of technician courses. Most such courses are at college level, but require only 2 years to finish.

Purdue Technical Institute



Briefly, as described last month, you can get the necessary training in a number of ways: at technical institutes, junior and community colleges, extension divisions of colleges and universities, home study schools (correspondence courses), through apprenticeship in industry, employee training courses associated with industry, and at various kinds of privately operated schools. Such training may be had all over the land, with much of it available right in your own geographical back yard.

How much does it cost? What are the courses like? What kinds of jobs do they lead to? What salaries do you receive? As in the opening half of this article last month, we will here spot-answer such questions while presenting general information about the various types of technicians not previously covered and describing some of the ways of training.

Aeronautical Engineering

All three branches of the aviation industry—whether manufacturing, research and development, or air transport—are hungry for technicians. Today's advances in jet engines and high-performance aircraft call for many thousands of such trained men—and the present new era of aviation is just in its beginning. The aero-technician's work is connected with the design, development and operational aspects of aircraft. As the assistant and right-hand man of the engineer, he may be assigned to project work on airframes and engines, including those connected with helicopters and guided missiles—such projects as the ones taking in stress analysis, structural design, flight test evaluation.

That's production. The aero-technician may also go into maintenance, either on airframes or powerplants. And in addition to these strictly engineering aspects, he may be employed in field work, sales, inspection and other related branches of industry. He may be asked to help in research, to evaluate experimental data, to act as a liaison man—the fellow sent by a big aircraft manufacturer to a subcontractor, for instance, to see that the part or accessory being made by the latter comes out as called for.

In general, job opportunities embrace designations like airframe designer, airport-control operator, aircraft instrument and accessory technician, airframe maintenance supervisor, flight engineer and others. (Does that "airport-control oper-

ator" stump you? He's the gent who controls take-offs and landings by radio, lights and radar.)

Pay for the aeronautical technician starts from \$300 to \$400 per month, with fast raises for those who prove they can move along. There is all the room in the world for the man who shows he has what it takes to become a supervisor—to direct a group. Whether you know it or not, the "supervisory problem" is a very real one in the aircraft industry—as well as in practically every American industry today. And says Frank K. Johnson, manager, Personnel Units, Lockheed Aircraft Corporation, Marietta, Ga.:

"It appears to me that the technical institute level of training is one of the answers to industry's supervisory problem. Graduates of these schools have basic scientific training, including technical 'know-how' and the supervisory and management training that they need as potential managers and supervisors in industry."

Schools that give courses for aeronautical technicians may be junior colleges, like San Diego Junior College in California. (It should be noted that as used in educational circles the term "junior college," traditionally meaning institutions offering two-year practical terminal courses in addition to the first and second years toward a regular college course, may include also technical institutes and other two-year schools, both publicly and privately run.) The schools may be extension divisions of universities, like the Purdue Technical Institute, or state-operated schools like New York's Long Island Agricultural and Technical Institute.

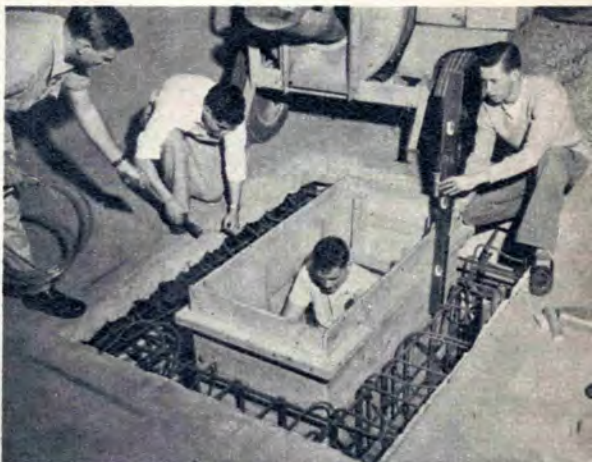
Following is a list of schools approved by the National Council of Technical Schools, a nonprofit approving agency for private technical schools. We offer them as examples of institutions that, with the exception of the last-named, are devoted to aeronautical technician courses exclusively, and not as taught along with other subjects:

Academy of Aeronautics, LaGuardia Field, New York, N. Y. Aeronautical University, 1905 South Prairie Ave., Chicago 16, Ill. Cal-Aero Technical Institute, Grand Central Air Terminal, Glendale, Calif. Embry-Riddle School of Aviation, 3240 N.W. 27th Ave., Miami, Fla. Northrop Aeronautical Institute, 1155 West Arbor Vitae, Inglewood, Calif. University of (Continued on page 82)



Rochester Institute of Technology

Chemical technicians may start out as lab assistants, turn supervisors, production heads. Variety of opportunities in all courses.



L. I. Agricultural & Technical Institute

Building Construction technicians may become draftsmen, foremen, contractors. (These students concreting machine base.)

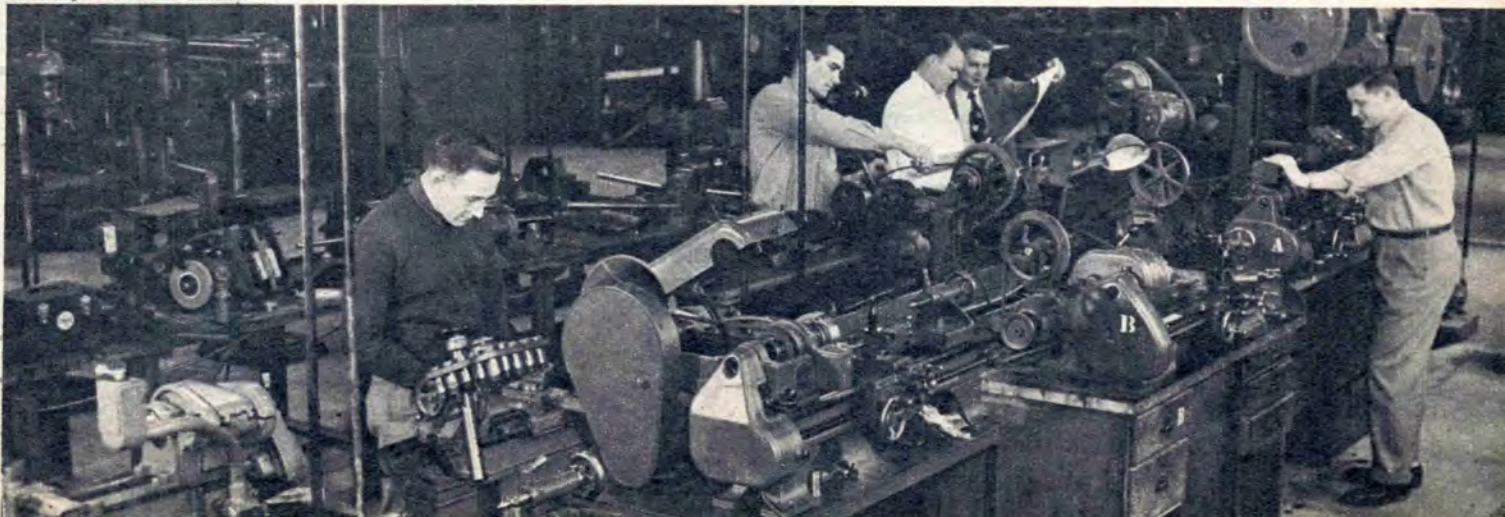


General Motors Institute

English, other general subjects included, given practical application. Here, instructor records a live "on your feet" speech by student.

Machine shop practice is vital part of many courses. Private schools, state schools, on-the-job—at least 8 ways to acquire training.

U. of Dayton Technical Institute



NEW



We have tested and used AERO GLOSS Hot Fuel Proof products and highly recommend them for finishing this model.



FRANK EHRLING . . .
noted model authority and author (pictured here) is the designer of this model.



**Assemble & Race this Beauty
IN 3 HOURS!**

The brand-new TORPEDO kit is super-prefabricated for quick, easy assembly. Put-it-together in a few hours . . . hook on your outboard engine . . . and you're all set to race this speedboat thriller. The 100% complete kit features a genuine mahogany veneer hull . . . just like the full size speedboats.

KING SIZE

**20" LENGTH
8" BEAM**

BE
SPECIFIC
SAY—

SCIENTIFIC

SCIENTIFIC

TORPEDO

\$2⁵⁰
**COMPLETE
LESS ENGINE**

**You Won't
Believe this
LOW PRICE
Possible!**



OUTBOARD ENGINE FANS... this is your SPEED!

Hang on to your hats! You're looking at the brand-new Scientific "TORPEDO" . . . the hottest, fastest speedboat sensation to hit the water since modeling began. It's positively terrific! A new kind of speedboat racing thrill! We call it our "TORPEDO" because it's got all the speed, action and excitement that the name implies. But hurry . . . see it at your dealers right away — before he "sells out."

SCIENTIFIC MODEL AIRPLANE COMPANY

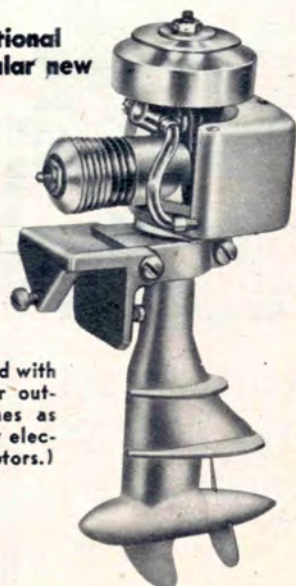
113 ALL MONROE ST., NEWARK 5, N. J.

If no dealer is available, add 10c (postage & packing) to cost of model

**Simply Sensational
with the popular new**

ATWOOD

**Outboard
Engine**



(Can also be used with
any of the other out-
board gas engines as
well as the many elec-
tric outboard motors.)



M..M..M..BOY!

**For Fun ★ Thrills ★ Excitement
Nothing Beats These**

SCIENTIFIC

MODEL THRILLERS

**Action Packed
VALUE PACKED
Fun-Packed**

**EVERY SINGLE KIT A
BIG-BARGAIN
FOR THE MONEY!**

Examine any Scientific kit. See how jam-packed it is with all those big quality features you'd expect to find only on the more costly models. Airplane kits, for example, are completely prefabricated—as you like 'em! You'll find such big-value features as: Carved Balsa Fuselages, Airfoil Shaped Balsa Wings, Metal Cowlings, Formed Landing Gears, etc.—every single kit a tremendous value for the money. Speedboat kits are a big bargain, too, with such features as: Completely Carved Balsa Hulls, Brass Metal Fittings, etc. Frankly, we think it's good business to give you more . . . much more for your modeling dollar. That way—you'll buy more Scientific models.

FREE!

SCIENTIFIC CATALOG . . . Contains all our exciting action models: Airplanes, Speedboats, Race Cars, etc.

BE SPECIFIC SAY—

SCIENTIFIC

**SCIENTIFIC MODEL
AIRPLANE COMPANY**

113 ALL MONROE ST.,
NEWARK 5, N. J.

SEE YOUR DEALER FIRST. If no dealer is available, add 10c (postage & packing) to cost of model.



**NORTH AMERICAN
F-82
TWIN MUSTANG**

WINGSPAN: 18" FOR .035 TO .074 ENGINES
The fabulous F-82 . . . first time as a control-line, fly-it-yourself scale model. Flies like a "dream" on ONE or TWO gas engines. Super-prefabbed kit includes: Two (2) carved balsa fuselages, Airfoil shaped balsa wing, Two (2) formed plastic canopies, Two (2) pilots, Two (2) metal cowlings, etc., etc. **\$295**



**PITT'S SPECIAL
LITTLE STINKER**

WINGSPAN: 16" FOR .020 TO .074 ENGINES
Betty Skelton's championship stunt flyer . . . never before at this low, low price. It's highly colorful—a terrific performer. Prefabbed kit contains carved balsa fuselage, airfoiled wings, colorful decals, etc. **\$250**



TEXAN AT6 \$1.95
SPAN: 18" For .035 to .074 Eng.
Our extremely popular scale model of the North American AT6 Trainer. Features carved balsa fuselage, etc.



AMERICAN BOY \$1.00
SPAN: 18" For .020 to .074 Eng.
Our U-Control trainer . . . the biggest dollars worth of model airplane in the world. 100% complete.



MONOCOUPÉ 90A \$1.50
SPAN: 18" For .035 to .074 Eng.
Scale model of America's favorite private plane. Prefabbed kit includes carved balsa fuselage, formed cowl.



LITTLE MUSTANG \$1.95
SPAN: 18" For .020 to .074 Eng.
Famous escort fighter model. Completely prefabricated. Features carved balsa fuselage, formed balsa wing.



LITTLE BUCKEYE \$1.95
"1/2A" Eng., Jetex, Elec. Motors
New, low cost speedboat thriller. Completely prefabricated, 12" carved balsa hull, brass metal fittings, etc.



RIVIERA \$3.50
For "1/2A" Eng., Electric Motors
Authentic Chris-Craft replica with a 12" carved balsa hull and brass metal fittings. All parts finished.



SEA HAWK \$2.50
"1/2A" Eng., CO₂ or Elec. Motors
Prefabbed. Has a 12" carved balsa hull, brass metal fittings, etc. Aeronautical fin and rudder design.



BUCKEYE JR. \$3.50
LENGTH: 14" For .020 to .074 Eng.
A "beast" of a speedboat. Prefabbed model is 100% complete—carved balsa hull, brass fittings.



CURTISS HAWK \$2.95
SPAN: 17 1/2" For .020 to .074 Eng.
Deluxe U-Control model. 100% complete—with carved balsa fuselage, wings, etc. Easy to assemble.



LITTLE MERCURY \$1.50
SPAN: 18" For .039 to .074 Eng.
Carved fuselage model, an excellent U-Control flyer. It's completely prefabricated. A cinch to assemble.



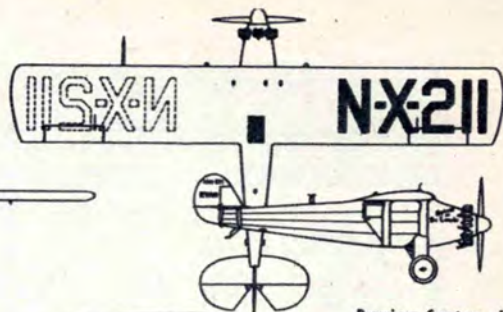
WACO CABIN \$1.50
For .020 to .049 Engines
Imagine! This carved fuselage biplane "beauty" for only \$1.50. It's semi-scale. Prefabbed for U-Control.



LITTLE DEVIL \$1.50
SPAN: 18" For .020 to .074 Eng.
An economically priced U-Control model. Prefabbed parts include: formed balsa fuselage & wing, etc.

BRAND NEW!

Licensed Under
JIM WALKER'S U-CONTROL
U. S. Patent No. 2,292,416



Drawings Courtesy of
AIR TRAILS
Hobbies for Young Men



A U-CONTROL Fly-it-Yourself AUTHENTIC SCALE MODEL

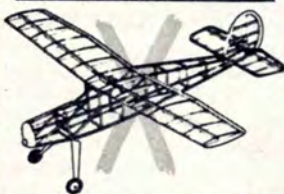
NOW YOU CAN FLY IT! The most famous airplane in the history of aviation . . . the one and only SPIRIT OF ST. LOUIS. Honestly, words just can't do justice to this thrilling model replica. We've taken great pains (and much pride) to bring you exactly "your kind of model" of this historical monoplane. In flight, it's a downright "dream" . . . responding smoothly, easily to your controls. In assembly . . . you assemble the few ready-formed parts (no tedious framework assembly) in "nothing flat." Add your engine, and you're all set to fly your very own "SPIRIT OF ST. LOUIS." See the kit at your dealers . . . soon. Open the box and examine the "complete to the last detail" contents. We're sure you'll agree that it's a tremendous bargain.

ONLY
\$4⁹⁵ complete
less
engine

THIS



NOT this



THIS

One Piece Airfoiled Balsa Wing, Curved Balsa Fuselage, Formed Balsa Tail Assembly, Metal Cowl, Formed Landing Gear, Rubber Wheels with Bushings, Formed Metal Motor Mount, Plastic Spinner, Decals, All Hardware . . . etc., etc. All parts ready formed . . . completely prefabricated for super-easy assembly.

NOT this

Old-fashioned flimsy construction. Tedious "stick framework" assembly requiring days and days of messy cutting, gluing, fitting, covering, etc., etc.

DEALERS!

We have a beautiful "Spirit of St. Louis" window streamer ready for you. It's highly colorful . . . free for the asking to DEALERS ONLY. Ask your jobber or write direct.

SEE IT AT YOUR DEALERS!

SCIENTIFIC

SPIRIT OF ST. LOUIS

26" WINGSPAN

FOR A or B ENGINES ENG. DISP. .099 to .23

SCIENTIFIC MODEL AIRPLANE COMPANY

113 AII MONROE ST., NEWARK 5, N. J.

If no dealer is available, add 10c (postage & packing) to cost of model

SCIENTIFIC

BE
SPECIFIC
SAY—

POLK'S FOR LATEST IN RADIO CONTROL

ANOTHER FIRST! The new E. D. ARISTOL FREE BAND "BOOMERANG" radio control receiver, transmitter and escapement. Not just another set but completely redesigned electronically and physically. Not a kit! All factory built, factory adjusted, pre-tested and COMPLETELY WIRED—READY TO INSTALL IN YOUR PLANE OR BOAT. NO SOLDERING—All components (Receiver, Escapement, Switch, Plugs and Sockets) are pre-assembled—just attach 4 wires to battery supply . . . it is just that simple! No increase in price. **\$57.50**



A. TRANSMITTER: 3A4 tube giving greater radiation than any other CRYSTAL controlled transmitter. Entirely self-contained including 8 ft. sectional aerial and extension keying switch. Checked and stabilized to conform to new F.C.C. ruling of $\pm 0.04\%$ on frequency. Batteries 135 volt and 1.5 volt. **\$29.50**

STANDARD RECEIVER PACK

B. Standard "Boomerang" Receiver unit now fully cabled to escapement, plugs, sockets, switches, and rheostat. Just install and fly. Special "5 lives" tube circuit gives 5 times normal tube life. New relay gives positive contact under all conditions. Special antenna coupling makes even short aerials sensitive. (No need to increase battery voltage—a practice which materially lowers the tube life.) Specialized controls can be used because all three relay contact connections have been wired to sockets. Plug in for special controls is included. Weight 1.9 ozs. Batt. 45V and 1.5V. Price includes escapement and all switches, plugs, sockets, etc. WIRED AS A UNIT. READY TO INSTALL. **\$29.50** NOT A KIT!

C. ESCAPEMENT: 100% reliability due to robust and accurate construction of claw and rotor. Special double winding and current-saving device increases battery life, a feature first developed by E. D. Weighs only $\frac{3}{4}$ oz. Uses 3 pen cells. **\$5.50**

HARD TUBE RECEIVER PACK

D. "BOOMERANG" HARD TUBE RECEIVER has same characteristics of standard "Boomerang" unit except for higher voltages necessary. Special relay is used and specialized controls can be added. Weight $3\frac{1}{2}$ ozs. Price includes escapement and all switches, plugs, sockets, etc. WIRED AS A UNIT. READY TO INSTALL. NOT A KIT! **\$29.50**

FENNERS-PIKE SERVO UNIT

World Patents Pending. True proportional steering control. Operates rudder plus additional control on secondary circuit—both on single channel. Shock resisting, works with any existing receiver. Weight $2\frac{1}{2}$ ozs.



\$12.50

FENNER-PIKE CONTROL BOX

Has provision for FULL-ON and FULL-OFF signals if required. Has two-speed pulse control by press-button. Has potentiometer for adjustment of pulse speed. Is supplied complete with 6-foot flex for connecting to battery and transmitter. **\$12.50**



REED UNIT—Supplied in different frequency ranges which, when combined, will give up to nine channels. Diagram of suitable transmitter and receiver also supplied to enable construction of own equipment. Weight $1\frac{1}{2}$ ozs. **\$19.95**

CLOCKWORK ESCAPEMENT

—Ideal for marine use, set powered with an enclosed spring wound motor. For 2 or 4 position operation. Weight 3 ozs. **\$11.50**



POLKS ARE RADIO CONTROL

HEADQUARTERS. All leading brands of sets, tubes, replacement parts, books, and accessories in stock. DEALERS: One Stop Orders for All R.C. Standard Discounts!

POLK'S MODEL HOBBIES
314 5th Ave. (10th Fl.) N.Y.C.

'Round the Track



You're looking at Stan Heckler's "manufactured proto" doing 130.81 mph during its world record tying run at the Bethlehem, Pa., Fox Speedway. Unusual photo made by Bob More.

Interested in model cars and scale vehicles? This is your department. Let's have your news and pix

■ Though the speed boys continued to race as usual, everyone with a chance to attend the Nationals at Anderson, Ind., was not so long ago tuning up his speedster for this big annual event. We will have a full story with pictures on this, so look for it soon in ATH.

A rundown of the winners of Regional races held all over the country is given below. These winners were to receive trophies at the Nats. *Western* (Ontario, Calif.): Custom—1. Bill Terra; 2. Bart Dimmetted. Mfd. Proto—1. Donna Terra; 2. Vincent Dimattio. *Midwest* (Bellefonte, Ill.): Custom—1. C. Flynt; 2. C. Franz. Spur Gear—1. Jerry Pope. *Eastern* (Bethlehem, Pa.): Custom—1. Bob Loose; 2. Howard Fox. Mfd. Proto—1. Al Holicza; 2. Sal Lollo. Spur—1. Al Winters; 2. Howard Fox. *Southern* (Atlanta, Ga.): Custom—1. N. A. Olson; 2. Dan Dyer. Spur—1. Eddie Clayton; 2. Bob Sargent. Sportsmen—1. Bill Jacoway; 2. Bob Sargent. BB Class—1. J. N. Perkins; 2. Charles Bagley. J. N. Perkins; 2. Charles Bagley, Jr. Certificates of Performance and Track Record Certificates were also passed out at the National Banquet.

More complete notes on the Eastern Regionals were sent in by Bob More (66 W. Elizabeth Ave., Bethlehem, Pa.). Bob notes that Reading, Pa., has long been known as one of the racing capitals of the country, having produced such big car stars as Bill Holland, Joey Chitwood and Tommy Hinnerschitz, and has now produced a hot miniature car man in the person of Bob Loose; Bob showed up at the Bethlehem track and took top place in Custom with little apparent effort. His speed was 146.58, which tied the 1954 Track Record.

His car looks pretty much like all the other good ones, but there are internal features that enable it to get a "bite" on tracks where other cars slip and spin; the secret is in the balance, with a new pan design which is considerably heavier in some places than on the average car. This car also features the "pan handle" type of bridle, and is a slick job throughout. Al Holicza's

127.84 in Mfd. Proto is very good when you consider that the car must be run just as it was made, with no chromed parts, and no alterations of gearing. Al Winter of Philly made his very good 136.99 mph speed with a car that had not been run since last year's Nationals in Atlanta.

Members of the Paterson, N. J. Club had the idea for a "Nationals Tuneup Race," and offered to sponsor same at the Fox Speedway in Bethlehem; the offer was accepted enthusiastically by local racers, and the Paterson gang showed up with the necessary trophies, and willingness to do all the work. Though Howard Fox had high times in both Custom and Spur, his engine in the latter car got too hot and ended with a ventilated piston, necessitating a rebuild job.

Frank Higgins had lost 7 mph since the last time out, but swore all he had done to his car was to change the shut-off valve; Bill More ran well, but later discovered that the piston rings had stuck in their grooves, so that engine had to be torn down too. Ted Jacobs and Mike Tucci were searching frantically for lost needle valve settings, while Eddie Allaire said his new piston was no danged good. Jack Wolf's Arrow emitted strange noises, found to be caused by an assortment of loose gear teeth in the bottom of the pan. Sal Lollo's work bench seemed to show more engine parts strewn about every time it was checked, while Bob More broke an engine in half. Jim Petrakis had two "No Times" recorded, and looked so sour that our reporter decided not to ask what his trouble was! So the gang ended up worse off for upcoming Nats than before, but they did learn that the Paterson gang can run a fine meet and hand out beautiful trophies.

The winners were: Custom—1. Howard Fox, Fox car, 148.51; 2. Bob Loose, modified Fox, 146.82; 3. W. S. More, Fox, 143.31; 4. Frank Higgins, Fox, 138.46; 5. Ed Rogers, Fox, 138.46; 6. Johnny Lutz, (Continued on next page)

Air Trails HOBBIES For Young Men

Arrow, 136.36; 7. John Culili, Masonheimer, 135.57. Mfd. Proto—1. Stan Heckler, Arrow, 128.02; 2. Sal Lollo, Arrow, 124.48. Spur Gear—1. Howard Fox, Borden, 138.67; 2. Frank Valleo, Borden, 130.43. All those listed in Custom and first placers in the other two classes received trophies.

Several interesting rumors have turned up, one that Dooling will continue to make replacement parts, and that C-R will keep on making tires.

Where to Get It. Many of the speed boys have had trouble obtaining supplies of nitro chemicals, and other components to mix their own fuels. We learn that all the necessary liquids may be had from Franny's Chrome Specialty Products (513 Vesta Pl., Hyde Park, Reading, Pa.). Nitro methane sells for \$7.50 per gallon, oil of merbane for \$6.50, castor oil for \$5.00 and methanol for \$1.25. All are cheaper if purchased in five-gallon lots—a very good deal for club members.

Franny also makes up four types of hot fuels as follows: Red Mist for magneto cars only, \$2.25 per quart; Green Mist for rail cars, Mites, stunt planes and speed boats, \$2; Blue Mist, same as Green Mist but for use when humidity is high—same price; Yellow Mist is for cars without shutoff valves, and for general use in model plane contest flying. All these fuels are colored according to name, and all are mixed fresh at time of order; all are somewhat lower in cost if purchased in gallon containers. Fuels and liquids are shipped by Railway Express only, F.O.B. Reading, Pa.; cash or COD orders are welcomed.

**HIGH
POWERED!**

**ATWOOD
1/2-A "Cadet"**



THE IDEAL POWER
PLANT FOR PLANES,
CARS OR BOATS

PERFORMANCE
UP TO
17,000 R.P.M.

WEIGHT
1 oz. COMPLETE
EASY STARTING
SMOOTH RUNNING

But **LOW
PRICED!**
\$4.95

ATWOOD MOTORS
3716 Park Place, Montrose, Calif.

New! WORLD'S LARGEST GAS MODEL BOMBER B-25



67" Span. Length 49". "U" Control, Radio Control, or Free Flight

This 1" scale model can't be told from the real North American B-25 Bomber. Features of the construction set are 3" scale rubber tired alum. disc wheels, 4 1/4" alum. cowls, planked type balsa fuselage, ready cut tail and rudder balsa, alum. guns, all parts, and full size drawing. For easy handling of this model, the outer wing panels are removable, reducing the wing span to 30". Two OK 14 or 23" type motors \$20.00 can be used. Const. set, postpaid.....

CURTISS P40F GAS MODEL



48" Span. Free flight or U Control
Improved with new 3 1/2" alum. spinner and 3" Veco alum. disk semi-pneumatic rubber wheels. Planked type body, parts printed on balsa, and all \$9.00 parts. Set

REPUBLIC P47D GAS MODEL



35 1/2" span, 1/4" scale. Length 30 1/2". One-piece moulded, clear Plexiglas cockpit enclosure. 2 1/4" scale alum. disk rubber wheels. Body planking full size plans. Uses B or C motor. \$5.95 Set

9" TAYLOR CRAFT GAS MODEL



9 foot span. Can use Radio control. Set has 36 ready cut wing ribs, cut plywood body formers, 16" carved prop, tail wheel unit, 2 full size plans, printed balsa, silkspan, etc. Uses "C" type motor, single, twin, or 4 cyl. motor. Set without..... \$17.50 motor or wheels, postpaid.....
Extra pair of 4 1/4" airwheels, \$3.00

BOEING PT17 GAS



45" Span. Can use 5 cyl. M5 motor to scale or B or C type motor. U control. Set has scale rubber wheels and all spec. parts, ready cut wing \$9.95 ribs, tail wheel unit and wheel. Const. set..

Get our 1954 catalog with large actual photos of all our models, 10¢ coin.

Add 25c postage each set

NORTH AMER. SABRE JET F86D



24" Span. Uses 150 Jetex motor. An exact scale model. Plan shows motor installation. \$4.00 Const. set less motor.....

NEW PIPER CUB GAS 1/2 A



26" Span. Uses .035 to .049 gas motor. Set has printed body sides. Very strong and very light; scale rubber Veco wheels and prop. A real beauty in its class. Const. set..... \$2.00

CURTIS HAWK F11C4



32 1/2" Span. Length 23 1/2". 1" Scale. A real collector's item. Finely detailed. Set has air wheels, ready cut plans, turned balsa cowl unit, parts, printed on balsa. Const. set..... \$4.50

Grumman-F3F1



N. American B-25



32" span. 1" scale. Const. 33 1/2" span. 1/2" scale. Const. set. Rubber driven... \$3.75 set. Rubber driven... \$4.00

REARWIN GAS MODEL



56" Span. Radio or free flight. A new scale beauty. Superset features, plastic spinner, carved prop, rubber tired wheels, con. scaled motor, and ready cut wing ribs. Uses .14 to .23 motor. \$12.50 Const. set less motor.....

MINIATURE AIRCRAFT CORP.

83 DANIEL LOW TERRACE
STATEN ISLAND 1, N. Y.

Here They Are Fellows! Monogram **NEW**

Speedee-Bilt Models of
Famous Aircraft



B ★ 24 Liberator

46 Molded Plastic Parts
49 Finished Balsa Parts

More B-24's were used in World War II than any other 4-engine bomber. B-24 guns knocked out 4,189 enemy aircraft.

Super Deluxe \$4.95
Kit H-4



The Models You Asked For — The Features You Want — Finishing Materials Included

You asked for them, fellows. In the thousands of letters recently received from you model builders, more of you asked for the sleek B-17 and the fat-bodied B-24 than any other aircraft. So here they are—true scale copies of the big fellows pictured above and in full glorious color on the kit boxes at your favorite hobby shop.



You liked our twin-engined bombers last year. You'll like these four engined jobs even more, for you'll build them with the most fabulous kits that have ever been produced. There has never been anything like these kits before. They provide detail and realism and scale exactness never found in any other kit. And even with four engines, they are easier to put together . . . more fun to build

. . . than simple, single engine planes, because all parts are completely finished.



What's more, the patented balsa Monofoil wing and balsa Monofuse fuselage are completely prefabricated. The wings especially are a joy to see . . . all hollow . . . feather-light . . . thin balsa . . . with machined leading and trailing edges and double airfoiled to exact shape. The plastic parts are the finest, most costly acetate, with super detailing molded in.



These kits are complete too. Everything you need is included. You even get four full one ounce jars of Mono-Dope in the authentic colors of the real plane and a large tube of Mono-Glue, the cement

that dries quick and really holds. These products are made for Monogram kits and you use them on the plastic as well as the balsa parts with perfect results. Complete decals included too—insignia, squadron markings, bombing missions, enemy plane score keepers, etc., all in authentic colors.



In addition to big full size, three-view plans, you'll get a 16-page assembly instruction book, with complete details and dozens of assembly pictures.



Whatever you do, go see the new Monogram four-engine bomber kits at your dealer. The B-17 will be ready October 8th and the B-24 on October 29th. Start enjoying the thrill of a lifetime by building your choice as soon as you can.

Super Deluxe Four Engine Bombers

Build These Famous Bombers With These Fabulous New Kits!
The Finest Model Building Kits in Aircraft History!

**MORE DETAIL . . . MORE REALISM . . . YET EASIER TO BUILD
THAN EVER BEFORE WITH ALL FINISHED PARTS!**

Check the plastic and balsa parts and the other features that make up these fabulous new Monogram kits. Then see the actual parts in the big bomber box (size 21 x 11 inches) display at your favorite model store, with each part in its own compartment as illustrated below. Note the details

in the plastic parts—the smooth, perfect machine finish of the balsa parts. Especially note how the parts fit—how they join together. Then you'll know why Monogram model builders make such beautiful models and why they have so much fun.

1 ★ Four Plastic Engine Nacelles

Paired in halves, they fit perfectly over the Monofoil wing airfoil.



3 ★ Mono-Dope in Authentic Colors

Four full one-ounce jars in required official colors. No slow-drying enamels are needed.



2 ★ 46 to 50 Detailed Plastic Parts

They include crew members, such as pilots, co-pilots, bombardiers, turret, tail and nose gunners, navigators, etc., props, cowls, engine nacelles, nose, canopies, turrets, machine guns, pitot tube, radio mast, astral dome, landing gear struts, etc.



4 ★ Plastic Propellers and 4 Cowls

Scale three-bladed props and detailed cowls. Props turn freely mounted on cowls.



5 ★ Mono-Glue. Use on Balsa and Plastic

Finest model builders cement. Large one-ounce tube, ample for model.



6 ★ Prefabricated Balsa Fuselage

Die cut and machined balsa parts, plus plastic parts



7 ★ Famous Monofoil Balsa Wings

The patented hollow wing that revolutionized model air plane building.



8 ★ 49 to 51 Finished Balsa Parts

Machine cowlings, tail parts, fuselage and other precision parts.



9 ★ Decal Insignia and Markings

Insignia, squadron markings, bombing missions, score keepers, etc.



10 ★ Three View Plans and Assembly Book

Full size, three-view plans and 16 page assembly instruction book.



B ★ 17 Flying Fortress

50 Molded Plastic Parts
49 Finished Balsa Parts

B-17 precision bombing paved the way to World War II invasion of central Europe.

Super Deluxe Kit H-3 \$495



See new kits at your dealer. If no dealer near you, add 35 cents for postage and packing and write to address below.

MONOGRAM MODELS, INC. ★ 3421 West 48th Place ★ Chicago 32

BABCOCK

The Ultimate in RADIO CONTROL

Designed for
Model Planes & Boats



Exclusive Babcock Military R/C Features



Unsurpassed in

- SIMPLICITY
- OPERATION
- RELIABILITY
- FINE QUALITY

Best insurance modeler can buy for protection
against model damage or loss. Most fun, too!

DELUXE 3 CHANNEL R/C

FOR MODELS WITH 32 OUNCE LOAD CAPACITY

Full pilot control of elevators, rudder and motor
speed, range 2 miles line-of-sight, reliable sensi-
tive receiver, virtually crash-proof, hand held
transmitter with 4-position control stick operation.

BCR-4 Receiver complete with tubes,
relays and connector \$86.00
BCT-4 Transmitter less batteries 69.00
BCR-4 Installation Kit complete 3.50

SINGLE CHANNEL R/C

FOR MODELS WITH 16 OUNCE
LOAD - CARRYING CAPACITY.

Simplest, easy to operate
system for modelers with
knowledge of model plane
and boat operation. Reli-
able, very sensitive, vir-
tually crash-proof receiver
—Hand held transmitter,
push-button control.

BCR-3 Receiver with
tubes, relay,
connector \$29.95

BCT-2 Transmitter
complete
less batteries .. 39.95

BCR-3 Installation kit 2.95

ALSO BABCOCK-BONNER
SERVOS

BUY BABCOCK!

From your local Dealer
Ask for Catalog
OR WRITE DIRECT



Radio Authorities and Users Agree
Babcock Radio Control Equipment is
Most Reliable, Easiest to Handle.
You get More for Your Money, too!

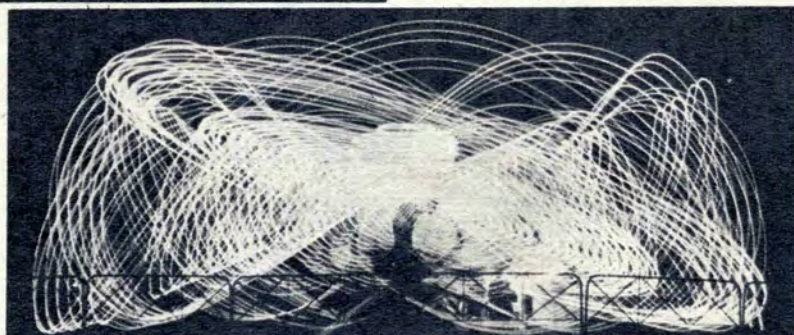
Manufactured and Fully Guaranteed by

BABCOCK RADIO ENGINEERING, INC.

7942 Woodley Ave. • Van Nuys, Calif.

Export Dept., Frazar & Hansen, Ltd., 301 Clay St.
San Francisco, Calif., USA

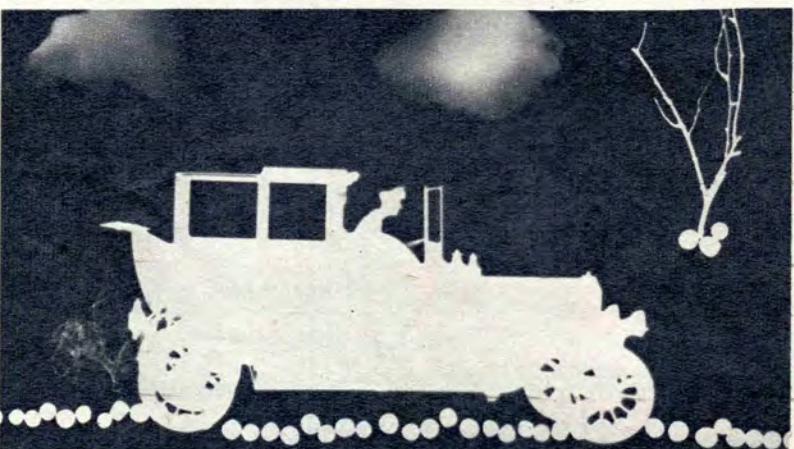
Trick Pix



Want to get sick? These are the gyrations you go through when you get on one
of these "Octopus" rides at the local carnival. A night photo by Norman McKay
of Toronto, Canada, taken at eight seconds exposure.



Whose turn next? The three little oranges look mighty scared, and why shouldn't
they? See what's happening to one of their pals! Here's humor and tragedy
combined. Submitted by Delon Dalke of Aberdeen, Idaho.



The 1911 Rolls-Royce is bumping along a pretty rough road. A photogram by
Jerry Keith of Tulsa, Okla., using a plastic model car, some peas, sticks and
cellophane, exposed directly onto photographic paper.

CASH IN WITH YOUR CAMERA • HOW TO WIN "TRICK-PIX" CASH

\$25 cash award for each trick picture used here. Submit as many different
entries as you wish; none should be less than 4 by 5 inches, and preferably
8 by 10 in. glossy prints. We will return all photos submitted but cannot
accept responsibility in case of loss or damage. Pictures may be of one-
dimensional subjects (people, inanimate objects, cartoon-caricatures, etc.),
or can be table-top full-dimensional scenes. Amateur and professional photog-
raphers stand an equal chance. Keep the subjects humorous and/or unusual.

GAS MODELS

DESIGNED BY WORLD-FAMOUS DESIGNER CARL GOLDBERG

BY CHAMPS FOR CHAMPS

Imagine—there's nothing to carve. They go together in a jiffy because everything is "precision pre-finished."



TRAINEE

WINGSPAN 30", LENGTH 26"

DESIGNED FOR .23 to .49 ENGINES

Smartest looking profile today! Actually flies itself with elevator control disconnected! Great for beginners. Kit G-2 \$3.95



RED RACER

For Tiny Engines or Jet Tubes

New thrills, speed and fun. Race in competition, in circles, or straightaway, indoors or outdoors. \$1.00



ZING!

Wingspan 23 1/2", Length 22"

Designed for .19 to .49 Engines

A cinch to build and a circus to fly! KIT G-1 \$4.95



LI'L RASCAL

Wingspan 27"

For free-flight and/or control line. 1/2 A ENGINES. Easiest of all to build. KIT G-5 . . . \$1.50



NIFTY

Wingspan 23 1/2", Length 20"

Designed for .19 to .49 Engines

What a kit! Makes nifty loops. A honey for sport flying.

KIT G-3 \$4.95

you can't miss with these

JIGTIMES

because... PATENTED DESIGN GIVES "NO-MISTAKE" ASSEMBLY.

All parts are die-cut—ready to assemble. NO TOOLS NEEDED!

Guaranteed to FLY!

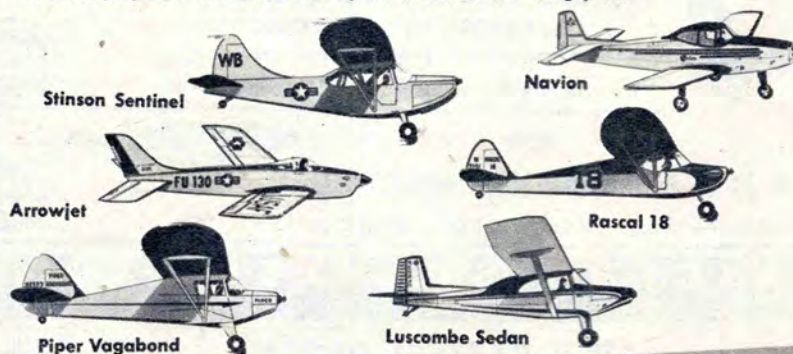
25¢ JIGTIME JETS



"Catapult" these jets with powerful rubber band supplied with kit.

59¢ JIGTIMES

2-color, propeller-driven beautiful flyers. Most have 18" wingspans.



AT ALL BETTER HOBBY STORES

If no dealer near you, send order to TOP FLITE. Add 20¢ per plane for postage and packing.

TOP FLITE MODELS, INC., 2637 S. Wabash Ave., Chicago 16, Ill.

TOP FLITE

as advertised in

LIFE



New MONO-LINE ABC TRAINER

BIG 36" WING

Ideal For .19 To .35 Engines

**THRILLING
LONG LINE FLYING**
Yes Sir! You Can
Actually Fly The
New ABC TRAINER
On 100 To 150 Ft. Line
BOY! What A Thrill

**COMPLETELY
PREFABRICATED**
Even The Elevator
Is Already Hinged

PREFABRICATED KIT FEATURES

- Fully Shaped Balsa Wing
- Finished Balsa Fuselage
- Formed Hardwood Nose
- Hardwood Engine Mount

- Hinged Balsa Tail Surfaces
- Music Wire Landing Gear
- Elevator Horn
- Plans And Instructions

FOR MONO-LINE CONTROLS SEE LISTING BELOW

ONLY
\$3.95

A B C MONO-LINE CONTROLS

CLASS A B C CONTROL UNIT

FOR SPORT, STUNT & SCALE



Completely Assembled, Ready To Install

\$1.50

A B C MONO-LINE HANDLE

Complete "Long" Handle For Sport, Stunt & Scale



\$1.95

VICTOR STANZEL & CO.
SCHULENBURG, TEXAS

ACME BATTERY CASES

THE RADIO CONTROL COMBINATION THAT'S TOPS

All Acme battery cases may be wired in series, parallel or combination of both. Varied voltages may be acquired easily since each terminal is individually insulated with genuine approved fibre. Aircraft aluminum is used so that they are light and rust proof. Solder lugs are pretinned to insure easy soldering. Contacts are all brass. Acme battery cases may be used wherever battery power is needed from 1 1/2 volts to 6 7/8 volts—such as for miniature electric motors, lights, radio control, boats, and many other uses.

#1 for 1 miniature pencil	25
#2 for 2 miniature pencils	40
#3 for 3 miniature pencils	60
#4 for 4 miniature pencils	75
#5 for 1 regular pencil	25
#6 for 2 regular pencils	40
#7 for 3 regular pencils	60
#8 for 4 regular pencils	75
#9 for 1 size C med. cell	25
#10 for 2 size C med. cells	40
#11 for 1 size D large cell	25
#12 for 2 size D large cells	40
#13 for 1-22 1/2 V	30
#14 for 2-22 1/2 V	50
#15 for 3-22 1/2 V	85
#13, 14 & 15 are for batteries such as Burgess U-15 and other makes the same size.	
#16 for 1 Burgess 3V 222P1 Pack	35

ACME ANTI-STALL VERTICAL TYPE R.C. FUEL TANKS

These vertical type radio control fuel tanks with Anti-Stall baffle built in will give constant engine performance during most R.C. maneuvers. Our fuel tanks are made of solid brass throughout. NO plating is ever used—you never have to worry about plating peeling off and injuring your engine since there is no plating. Mounting brackets are supplied with every Acme fuel tank at NO extra cost.

Type R#1-1 1/2"	one speed	.75
Type R#2-2"	one speed	.75
Type R#3-2 1/2"	one speed	.75
Type R#4-1 1/2"	two speed	.85
Type R#5-2"	two speed	.85
Type R#6-2 1/2"	two speed	.85
Cross section size is 7/8"x7/8" on all Type R Tanks.		



#2 R/C Tank

ACME MODEL ENGINEERING CO.
8120—7th AVE., RM. 308, BROOKLYN 9, N. Y.

See your dealer for our complete line of U-Control Fuel Tanks—R.C. Tanks—and Battery Cases. If he cannot get them for you, then order direct.

Engineering Tests

(Continued from page 21)

third of your class? Yes....; No....

Middle range grades may suggest a two-year community college or technical institute program.

4. Have your grades in high school English courses been in the top half of your class? Yes....; No....

If your mathematics grades have been in the top third but your English grades have been poor, you may "get by" in engineering college. Your later opportunities may be limited, however, if you cannot write letters and engineering reports which say clearly, forcefully, and effectively what you want to say. A number of colleges now have reading and/or writing "clinics" which can help those who have reading or writing difficulties.

5. Do you have sound habits of work and study? Yes....; No....

Engineering college students have to begin, soon after arrival at college, a steady round of assignments, laboratory work, and homework which their teachers expect them to complete on time. If you don't get around to things, if you haven't learned to work or study even though you are bright, you may fail in college or after college.

6. Can you visualize objects well in three dimensions, imagine them accurately from a two-dimensional sketch or drawing and also visualize the correct appearance of a drawing from the object itself? Yes....; No....

From the standpoint of graduation from engineering college, possession of this characteristic, though important, seems to be somewhat less important than mathematical aptitude.

7. Are you interested in the why of things? Yes....; No....

For example: Why are military airplanes more often jet-powered than are commercial airplanes? Why are some radio signals often weaker in the daytime than at night? Why are fluorescent lamps tube-shaped and incandescent lamps bulb-shaped? Why is most aluminum soft? Why are concrete highways usually laid in a series of slabs and not in one continuous strip? Why do suspension bridges have the same typical curves in the main cables?

8. Are you interested in improving things? Yes....; No....

Have you ever tried to improve on a piece of home or farm machinery, a bike or plaything; or a traditional way of doing something?

9. Can you get along well with the other fellows in your class? Yes....; No....

Almost all engineers today work with a number of other engineers and often with a number of other men who are not engineers or technical people. An engineer, to be successful, must be able to talk with these other people, must respect them for what they can do best, and must be the kind of man other men can respect and get along with. The "book-worm," the "odd" boy, the "sissy," or the "prissy" fellow may find himself out-of-place among men in training as engineers. Our leading engineers are real gentlemen equally at ease among men and women or among men alone.

(Continued on page 66)

Regular \$7.95 MARK III HI-POWER German Binoculars yours at 1/2 price!



Now only **3⁹⁸** REG. 7.95

See up to 18 MILES!

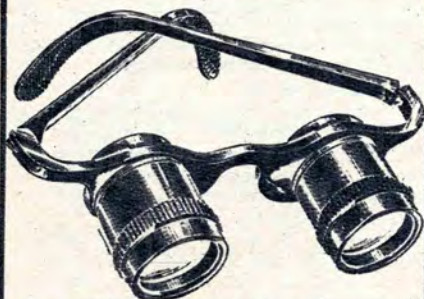
- Balanced Center Focusing
- Water Protected Case
- Genuine Optical Lenses
- No Eye Strain Ever!
- Lightweight Steel
- Changeable Sun Lenses

CASE GIVEN!

The ONLY Binocular with Changeable Lenses!

IMAGINE! The same genuine MARK III German Binoculars now being advertised in the U.S. at \$7.95—yours at 50% discount! The reason: **WE ARE OVERSTOCKED** and need cash! Our misfortune is your gain! You can get your MARK III at only 3.98, tax paid! And remember this is the latest model equipped with **REMOVABLE** sun lenses at no extra cost! A wonderful protection for your eyes in brilliant sunshine as well as nighttime sports events played under lights. Regular lenses as well as sun lenses are easily removed for cleaning. This is an added feature definitely **NOT** found in cheap binoculars.

FREE



With the purchase of a MARK III Binocular you are **GIVEN** one pair of **SPECTOSCOPES**—the binocular-spectacles you wear just like eye-glasses! Wear 'em all day long without fatigue! Use them at the theatre, at football games, races, enjoy TV, movies and Nature via their magnified, close-up viewing! Nationally advertised at \$1.98, this West German Import is a precision glass that gives you a **NEW OUT-LOOK** on the world around you!

Never—but **NEVER** before—have we been able to offer such magnificent binoculars at this **LOW PRICE!** A ruggedly constructed **ALL METAL** binocular that seems to melt away distance! Mind you—this is no cheap toy with crude plastic lenses. Each one of the **MARK III** lenses is ground and polished to give you superb viewing at 100 feet or 18 miles—or even more—depending on weather and vantage point. Objective lenses catch more light, give you **CLEAR, SHARP** pictures—and no wonder!—because they're made by German optical artisans, according to rigid **MARK III** standards. All metal **PLUS** center focusing. Ideal for watching sports, plane spotting, celestial observation, bird "shooting" and travel. The **MARK III** is a gift that lasts—

and gives thrills **YEAR AFTER YEAR!** Get several **NOW** for your friends & relatives! Rush us the coupon today and make sure you get yours before our import supply is exhausted.

THORESEN'S, Dept. 213-M-1740
352 Fourth Ave., New York 10, N. Y.
(CANADIANS: Order direct from our Montreal plant: Thoresen Co., Dept. 213-M-1740, 45 St. James St. W. Montreal 1, P. Q.)

RUSH NOW FOR FREE HOME TRIAL!

Thoresen's, Dept. 213-M-1740

352 Fourth Ave., New York 10, N. Y.

Gentlemen: Send me.....**MARK III** Binoculars with case at the special price of 3.98 on 5-Day **FREE HOME TRIAL**. Also include **ABSOLUTELY FREE** a Spectoscope binocular-spectacles, mine to keep in any case. If not completely satisfied, I will return for refund of 3.98.

☐ 3.98 payment enclosed. Send postpaid.

☐ Send C.O.D. plus fees.

NAME.....

ADDRESS.....

CITY.....STATE.....

Sensational *Speed* in the Water!

SEA DART

Plastic 3-Point Outboard Hydroplane

A Speed Demon in Action! Designed especially for the new gas outboard engines!

Actual photograph of model built from kit.

You'll get the thrill of your life when you send the SEA DART racing through the water!

Designed along latest hydrodynamic principles to insure top performance and stability, this 16" all-plastic model includes such special features as—Completely finished hull (including bridle mount) of high-impact Styron plastic, designed to thrive on the most rugged use! Die-cut Styron engine mount and cockpit fairing parts! Authentic racing-type decals! Can be assembled in minutes... operated either tethered or free! Your dealer has the SEA DART—ask him for it today!

\$395
Length 16"
Kit B-12 Beam 6½"

*Also for electric outboard motors

SEE THESE OTHER STERLING MODELS

PLANES

Kit	Price
Manocoupe C-1	\$4.95
Howard Pete C-2	5.95
Mr. Mulligan C-3	4.95
Waco C-4	5.95
Polish Fighter C-5	5.95
SE 5 C-6	5.95
Ryan S-T C-7	5.95
Fokker D-VII C-8	5.95
Corsair F4U-1 C-9	5.95
Ring Master S-1	2.95
F-51 Mustang S-2	2.95
Yak-9 S-3	2.95
Space Master, Jr. S-4	2.25
R. C. Piper Tri-Pacer FS-1	10.95

POWER BOATS

Kit	Price
Richardson 27' Cruiser B-1	\$5.95
Higgins 17' Speedster B-2	4.95
Chris-Craft 47' Buccaneer B-3	7.95
Century Resorter '20' B-4	3.25
Century Sea Maid '20' B-5	2.95
Chris-Craft 32' Cruiser B-6M	9.95
Deluxe 34-pc. scale marine fitting set for Kit B-6M B-6F	3.50
Chris-Craft 50' Catalina B-7M	11.95
Deluxe 66-pc. scale marine fitting set for Kit B-7M B-7F	4.95
Century Sea Maid '20' B-8M	7.95
Deluxe 35-pc. scale marine fitting set for Kit B-8M B-8F	3.95
Higgins 26' Express Cruiser B-9	3.95

Harco '40' Deluxe Cabin Cruiser B-10M	10.95
Deluxe 64-pc. scale marine fitting set for Kit B-10M B-10F	4.50
Chris-Craft 63' Motor Yacht B-11M	18.95
Deluxe 108-pc. scale marine fitting set for Kit B-11M B-11F	7.50

MARINE DRIVES

MARINE DRIVES	PRICE
1/2 A (1/8" dia.) Gas Marine Drive	\$2.95
A (3/16" dia.) Gas Marine Drive	3.95
BC (1/4" dia.) Gas Marine Drive	3.95
Electric Marine Drive	2.25
Marine Fittings Also Available Individually.	
Ask Your Dealer.	

(Continued from page 64)

10. Have you ever known an engineer and talked with him about what an engineer does? Yes....; No....

Plans are being developed in many states so that your high school principal can arrange for you to get in touch with some engineer to learn more about the wide variety of work that engineers do. Every year a number of young men come to an engineering college thinking that a professional engineer is a man who runs a steam, diesel or electric locomotive, who repairs radios, television sets, farm or home equipment or the like. The men who do these things are vital contributors to American life, but they did not have to go to an engineering college to learn to do these things. A trade, apprentice, vocational or technical institute program has fitted them for that work.

11. Do you try to be honest and fair with yourself and with others? Yes....; No....

This may be difficult for you to answer thoughtfully. No man who "kicks" himself for very long either as to what he knows, or what he can do, can really be

successful in any kind of work. No man who is unrealistic about his capabilities can survive long as an engineer. Successful engineers are too good at "smoking-out a phony," at discovering the "fake" and the "four-flusher." On the other hand they will admire and respect you if you know or can do a particular thing well and know that you can without being obnoxious.

If you are thoroughly honest with yourself, you have a splendid basis for being fair and honest with others, for treating them as you, ideally, would like them treat you.

12. Are you in good health?

Yes....; No....

Robust health is particularly required of the civil or construction engineer. Good health makes possible the steady long-continued hard study and work of all successful engineers.

Some persons will advise you that you cannot hope to do well in engineering unless you can work well with your hands (in high school shop work, for example) or can do drafting well. Although it is an advantage to have these

skills, it is far more critical for the prospective engineer to have the inquisitive, analytical, mathematical imaginative and creative traits previously mentioned.

Not directly related to the question, "Do you have engineering aptitude?" but vitally important is the following question:

Can you obtain (legally, of course) the necessary money to pay your way through an engineering college?

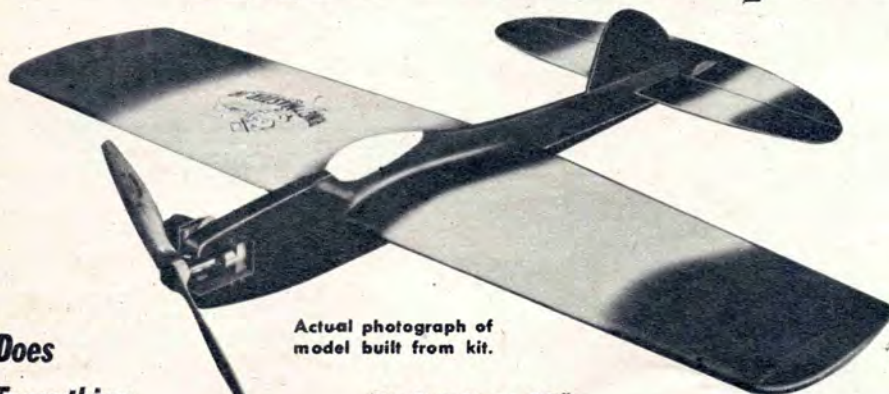
(The names and addresses of engineering colleges with accredited curricula in chemical engineering, civil engineering, electrical engineering, mechanical engineering, metallurgical engineering, mining engineering and other specialized engineering fields are given in the reprint "Accredited Undergraduate Engineering Curricula in the United States" published annually in November by the Engineers Council for Professional Development at 29 West 39th Street, New York 18, N. Y., for 25 cents per copy.)

Suppose, after you make careful estimates for each of several colleges, you decide you don't see how you can obtain the money you will need.

If you are a top-level student, have you inquired about one or more of the

A Circus of *Stunts* in the Air!

RING MASTER, JR.



**Does
Everything
in the Book—Plus!**

Actual photograph of
model built from kit.

Kit S-5 Span 30"
Length 21½" For
engines from .09 to .19

\$1.95

This is it! The Jr. model of the famous Sterling Ring Master... created by Matt Kania, world-renowned model designer. The RING MASTER, JR. will do every stunt in the book—and then some! Built of quality balsa wood with such special features as—Shaped and notched leading and trailing edges. Die-cut ribs and tail surfaces! Die-cut plywood parts! Die-cut fuselage! Decals! Formed wire landing gear! Hardwood motor mounts! EASY-TO-READ, STEP-BY-STEP PLANS AND INSTRUCTIONS! See your dealer now—start stunting with the RING MASTER, JR.—easy to build, and a snap to fly!

by ***Sterling*** models

1530-34 N. HANCOCK STREET PHILADELPHIA 22, PENNA.

MAIL COUPON TODAY

for new Sterling '54 catalog... showing
the world's finest collection of boat and
plane models!

STERLING MODELS, Dept. AT-11
1530-34 N. Hancock St.
Philadelphia 22, Pa.

Yes, I'd like to have a copy of the new
Sterling catalog! Enclosed is 10c in coin
to cover handling and mailing.

Name

Address

City Zone State



ASK FOR ME

WRITE FOR COMPLETE CATALOG TODAY

many types of scholarships available? Did you know that many millions of dollars worth of scholarships go "begging" in the United States every year?*

Have you investigated the opportunity to earn almost all your way through an engineering college which offers evening study or which follows the "co-operative" plan? Under the cooperative plan you go to college for 6 to 12 weeks, then work for a similar period, and continue alternating periods of work and college for 6 to 8 years. Cooperative plans of study are marked in the list of accredited curricula.

If you can not afford four years at an engineering college, have you investigated the possibility of taking the first two years in a nearby liberal arts, junior, or community college and the last two or three years at an engineering college?

Many companies encourage night and part-time technical courses. If you are called into the armed forces, you may receive some technical training and become eligible for considerable educational benefits after your period of service is over.

Wherever you are in America today, educational opportunity is available in

some way if you want it enough to find out how to get it. An engineering education will open the door to many unusual opportunities for those who want it and have the aptitude for it.

Interpretations of Answers

You would have the greatest likelihood of successful completion of a four or five year engineering college course if you could truthfully answer Yes to 10 or more of the 12 questions.

You would ordinarily have a fairly good chance of graduating from a four or five year engineering college if you could honestly answer Yes only to questions 1, 2, 3, 7, 10 and 12.

If your answer is No to question 4 or question 5 or both, you can usually get help to overcome those difficulties.

If your answer is No to question 6, remember that even some engineering graduates find it difficult to do this sort of visualizing.

If your answer to question 8 is "No, I am interested not in improving things but in ideas which someone else could use to improve things," it is entirely possible that you could be a successful engineer with the help of a good me-

chanic or someone who loved to tinker with things.

If your answer to question 9 is No or is "sometimes Yes, sometimes No," remember that you can, with the help of others, learn better "how to get along with other people."

If your answer to question 11 is No or is "sometimes Yes, sometimes No," try being more realistic with yourself and more understanding and fair with others. You'll improve your chances of a successful career.

The author wishes to acknowledge with appreciation the help of many of his friends in the engineering profession in making possible the development of these questions, answers, and interpretation of answers.

* You may want to look at "Scholarships and Fellowships Available at Institutions of Higher Education" published by the U.S. Office of Education. This may be obtained by sending the price of 55 cents to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. The listings are according to schools and subject-matter.

ANTIQUE GUN REPRODUCTIONS CONSTRUCTO KITS



ALL PARTS AND FITTINGS
CUT-TO-SHAPE! AUTHEN-
TIC REPLICAS OF FAMOUS
HISTORIC PISTOLS. MAKES
A HANDSOME FIREARM.

Luger 9MM—2.95

Colt .44 Frontier—2.50

Flintlock (Duelling)—2.50

Colt .380 Automatic—2.95

Colt .44 Dragon, 3RD—2.50

Walther P-38 Automatic—2.95

Police 38/44 Special—2.95

Remington Breech—1.50

*Allen's Patent—1.75

*Darling Pepper Box—1.75

*Philadelphia Derringer

*With Cast Metal Parts

ANTIQUE GUN MODELS

LOOK LIKE MUSEUM
PIECES. FULLY MACH-
INED WOOD STOCK
WITH METAL PARTS
IN SHAPED PLASTIC.

Kentucky—5.95

Jefferson—5.95

Jackson—4.95

Lafayette—5.95

Washington—5.95

Adams—4.95

Hamilton—5.95

Mogro—3.95

Morgan—5.95

Revere—3.95

Livingston—4.95

26" Blunderbuss 8.95

KENTUCKY RIFLE KIT: \$14.95

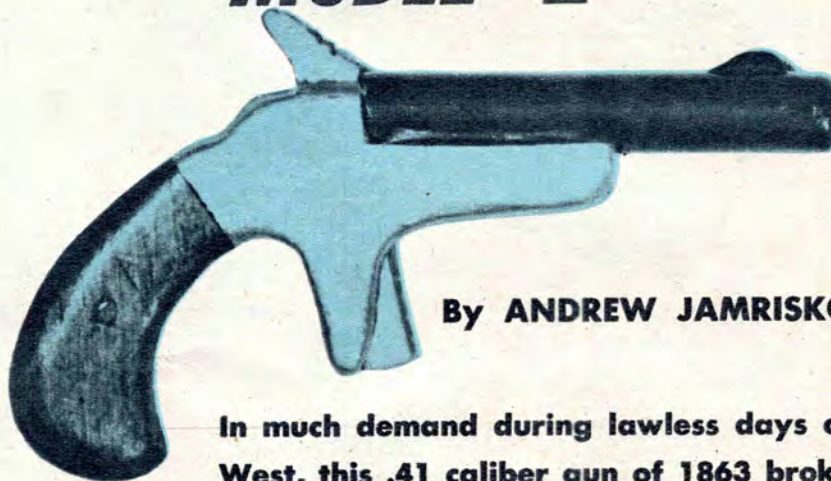
Add 25c P. & P. each gun. See Constructo
prefab ship model kits, 50c, \$1.50, Deluxe \$5
CATALOGS: HO 50c, Ship 50c, Tinplate 50c
Soldiers 25c, Leathercraft 10c
DEALERS: REGULAR TRADE PRICES
SOLD THROUGH SELECTED JOBBERS

POLK'S MODEL CRAFT HOBBIES

314 5th AVE. (A-104) N.Y. N.Y.

FOR THE WEAPONS COLLECTOR

COLT DERRINGER MODEL #2



By ANDREW JAMRISKO

In much demand during lawless days of
West, this .41 caliber gun of 1863 broke
open for loading like a modern shotgun

COLOR SCHEME: BARREL IS FLAT BLACK WITH POWDERED GRAPHITE RUBBED ON
TO IT. THE ENTIRE GUN MAY BE FINISHED THIS WAY EXCEPT THE GRIPS, WHICH
ARE TO BE STAINED OAK OR MAHOGANY. THE MAIN FRAME & SIDE PLATES CAN BE
SILVER OR BRASS. ENTIRE GUN EXCEPT BARREL CAN BE 1/4" SHEET Balsa OR PINE.

MAKE TWO SIDEPLATES
OF 1/4" SHEET AND GLUE
TO EACH SIDE OF THE
MAIN FRAME.

FILE GROOVES INTO HAMMER AND
TRIGGER WITH A SMALL FILE.

BARREL IS 5/8" DOWEL
WITH 3/8" HOLE APPROX.
1/2" OR 3/4" DEEP

NOTCH FOR FRAME

HAMMER

FRONT
SIGHT

4-40 NUT
& BOLT

TRIGGER

MAKE ONE MAIN
FRAME INCLUDING
TRIGGER (BUT NOT
THE BARREL) OF
1/4" SHEET.

HANDLES ARE 1/4" SHEET,
MADE SEPARATELY AND
STAINED OAK OR MAHOGANY

NOTE: ROUND
OFF ALL EDGES

0 1 2 3 4 5 6

"Mactuator"

(Continued from page 43)

magnetic units. None could be found with the correct windings, so the original wire was cut out, and the cores rewound. Before winding, the cores were drilled and tapped so that screws could be put in from each end. Winding was accomplished by clamping a hand drill in a vise, with the bobbin held in the chuck by means of a screw with the head clipped off. Each one required only a few minutes to wind, and care was taken to make the winding as smooth as possible—that is, in even layers.

The last framework piece to make is the mounting plate, which, since it is also part of the magnetic circuit, must also be of good iron. It is tapped for two mounting screws.

A couple of music wire stops were soldered to the polepieces, and rubber tubing slipped over them, to act as stops. The arm is fitted with a brass center, drilled for the rotor shaft. As we have had trouble in the past with "electrical noise" made by the rudder pushrod rubbing in a metal actuator arm, we always fit an insulating arm of this sort. To get the arm in the correct position on the shaft, remove the mounting plate, to allow the rotor to center strongly; then solder the arm fast with the ends extending across the gaps in the polepieces.

The actuator described is intended for use on 1.5 V. and should handle a plane up to about 5' size. For more power, you can use 3 V., or you could put on a winding of about 1300 turns of No. 32, which will give lots of pull on 3 V., but lower current.

It will be noted that the arm is double-
(Continued on page 73)

BADGER by KENHI



\$5.95

**COMPLETELY
PREFABRICATED
FOR ENGINES
19 TO 35**

The sweetest free-flight model ever put in a kit box. Big 6 foot wingspan, more than 850 square inches of lifting area. Long stabilizer moment for that flat, floating glide; short rudder moment for safe flying in any weather. Features the KENHI "Cross-Control", the best spiral dive preventer ever devised. Easy to build, easy to fly, a sure-fire contest winner.

**BUZZER'D
RADIO CONTROL
FREE-FLIGHT
SPORT OR CONTEST
\$10.95**



KENHI MODEL PRODUCTS ANAHEIM, CALIFORNIA

World-famous Inventor Charles F. Kettering, Director of General Motors, congratulates James C. Fry of Clinton, Illinois, 1954 winner of the \$4,000 Junior National Award Scholarship.



HOW'D YOU LIKE TO BE IN THIS PICTURE?

Of course, you would.

And, if you are the kind of youth who likes to make your own ideas work—do things with your hands—you have a very real chance to be.

For—like Jimmie Fry—you have the opportunity to win one of the big awards in the Fisher Body Craftsman's Guild Competition.

All you have to do is design a solid model car—whatever type appeals to you most. (The top Senior winner in 1954 was a sports car model.) Then you build it out of wood or some other workable material. Sand it

smooth. Paint it. And the job's done.

Don't get the idea, though, that it's the easiest job in the world. It'll take concentration and stick-to-itiveness.

Yet—as the hundreds of previous winners will tell you—it's more than worth every minute you put into it. Not only because of the chance to win one of the awards. But of the deep-down satisfaction of doing a job completely on your own—and doing it well.

So—there's the challenge!

Have you the ambition and the will to meet it?

FISHER BODY CRAFTSMAN'S GUILD AWARDS 1955

734 Awards—in all

8 University Scholarships (ranging from \$1,000 to \$4,000 each)

All-Expense Trips to Exciting 4-Day Guild Convention

Cash Awards up to \$150 in every state and the District of Columbia

Identical Awards for Junior and Senior Groups (If son of General Motors employee wins, his award is duplicated for the next boy)

FISHER BODY CRAFTSMAN'S GUILD

General Motors Building
Detroit 2, Michigan

Please enroll me in the Fisher Body Craftsman's Guild Competition for 1955. Also—send me the Craftsman's Guild membership card plus instructions for building model. This will be sent FREE and without obligation.

Name _____

Address _____

City and Zone _____ State _____

I was born on the _____ day of _____ 19 _____

Parent or Guardian _____

My Parent, or Guardian, is _____, or is not _____, employed by General Motors or a GM dealer.

(If Parent or Guardian is so employed, please give name of division or dealer below:)

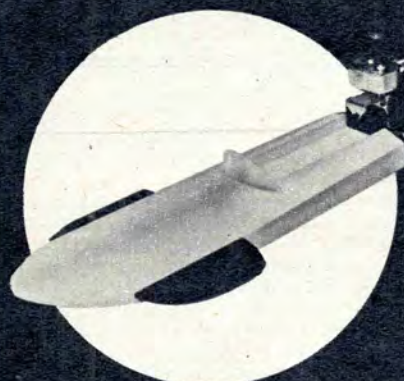
Name of my school _____

City _____ State _____

Dept. D-1

PORPOISE

ALL BALSA SPEEDBOAT
for glo or electric outboards
by MASTER MODEL CRAFT



A completely prefabricated speed proven design with genuine three point suspension. Length 15 3/4" — Beam 7". No tools necessary for assembly! Complete with simple step-by-step building instructions. Can be assembled and ready to launch in less than one hour.

\$2.95

OTHER MM PRODUCTS:

PRIMER—Realistic profile for stunt, sport. 18" span.	\$1.40
FLIP-FLAP—Revolutionary full stunt job. 24" span.	\$3.50
WING-DINGUS — Experts' choice for stunt, sport. 16" span.	\$2.25
RYAN-ST—17 1/2" wing span with die stamped metal cowl.	\$2.50
BRITISH SE-5—Super prefab half-A scale. 17" span.	\$2.50
BARRACUDA—Speedboat for 1/2 A gas or electric.	\$2.50
WING DING—Tops for half-A contest flying. 18" span.	\$2.25
"TIPSY"—Exact scale stunt flyer. 30" span.	\$5.95
SKYLARK.....	\$2.00
SMALL FRY.....	2.50
HOWARD "IKE".....	3.00
SEA SCOOTER.....	7.95
WHIRL-A-WAY.....	1.50

add 25c per kit by mail

MASTER MODEL CRAFT

727 WESTCHESTER AVENUE • NEW YORK 55, N. Y.

The Mac "9" is a diesel now too

This powerful performer can take on a multitude of jobs from fast control line operations up through radio control swinging big props at slow speeds

■ For power and flexibility the McCoy "9" diesel is carving out a place for itself in Class A. It is a rugged compact powerplant incorporating all the best features of this famous line of sport and racing engines.

Following the American concept of high-speed, short-stroke diesels, the McCoy "9" has a bore of .526" and a stroke of .460". This combination results in a cubic inch displacement of .098. Weight of the engine is just 3 ounces.

Because of its low weight and ability to run smoothly and steadily over a wide range of speeds, the McCoy "9" is suited to free-flight, control line or radio control models. Almost any desired amount of rpm and power can be achieved through proper adjustments to the needle valve and compression ratio, and changing propeller diameter or pitch. It runs equally as well at high speed swinging a 7 in. "toothpick" as it does at low speed swinging an 11 in. "club."

Diesels require a slightly different approach to the normal starting procedure of glow plug engines. For this reason it is important that the diesel novice read thoroughly the instructions sheet supplied with each engine.

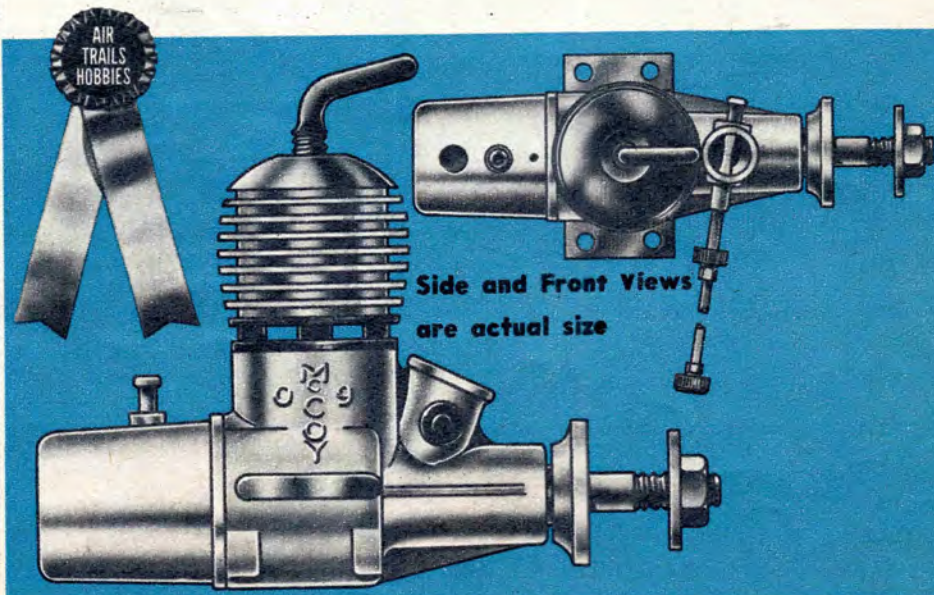
The one basic point to bear in mind when starting a diesel is that a near-perfect balance must be maintained between the compression lever setting and the needle valve setting. This balance is quite basic when you consider the principle of ignition in the "diesel" en-

gine, which incidentally is not the proper name for these engines in the true sense of the word. ("Compression ignition" would more aptly describe this type powerplant.)

As the true name implies, the fuel charge is fired by compression alone. Therefore it becomes quite apparent that the proper compression lever settings are solely dependent upon the volatility of the fuel and the size of the charge. In normal operation, the larger the charge (rich mixture) the lower the compression lever setting, and the smaller the charge (lean mixture) the higher the compression lever setting.

Construction-wise the McCoy "9" is rugged. The crankcase is die-cast from aluminum alloy and has a bronze main bearing. The venturi-shaped intake tube is cast integrally with the main crankcase casting, as are the beam type mounting lugs. The brass needle valve body is press-fitted to the intake tube and is angled rearward. The blunt tapered needle valve is machined from steel and is fitted with a flexible extension. . . . a feature designed to cut down on skinned knuckles.

The crankcase cover is an aluminum turning that threads into the rear of the crankcase. The one-piece balanced crankshaft is machined from steel, hardened and ground to a smooth finish. To insure proper lubrication and reduce friction it has been relieved at a point halfway between its forward end and the



round rotary intake port.

The aluminum drive washer is machined from solid stock and heavily knurled to prevent propeller slippage. A 10-32 nut threads to the crankshaft and thus holds the propeller in place.

The main cylinder barrel is steel and employs four intake and exhaust ports spaced evenly around its circumference. It threads into the crankcase and in turn is threaded on its upper portion to receive the machined aluminum head. The head is anodized red.

The short husky piston is machined from alloy steel and employs a dome-shaped head. It is ground to a mirror finish. The wrist pin is steel and is press-fitted to the piston. The aluminum connecting rod is round in cross-section and of sufficient diameter to withstand the terrific loads associated with diesel operations.

The steel contra piston not found in glow-plug engines but used in diesels to vary the compression ratio is grooved to take a synthetic compression ring. The contra piston has been machined in a concave manner to match the domed piston head.

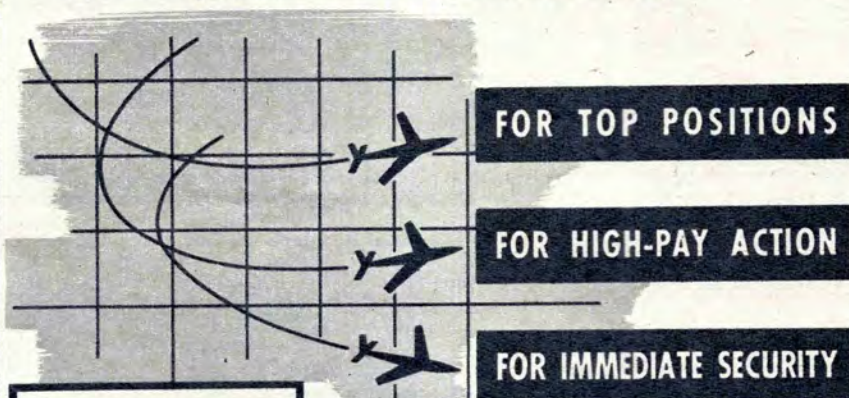
Compression ratio adjustments are made by a steel lever which threads into the cylinder head. A steel coil spring-fitted to the inside of the head exerts pressure against the threads of the lever and thus maintains settings.

Starting the test engine was simple once the proper settings were achieved. However, our engine flooded quite easily by over-choking. One-flip starts were accomplished by holding a finger over the intake and turning the propeller slowly until the fuel line was full, then priming directly into the cylinder through the opened exhaust ports. Three drops applied with an eye dropper proved the proper amount for this particular engine. (It should be noted that since each engine differs slightly, this starting procedure may not apply in all cases.)

Using McCoy fuel, the following speeds were attained after a sufficient break-in period: with a 7" diameter 6" pitch propeller—12,000 rpm; 9" diameter 4" pitch—9,500 rpm; 11" diameter 4" pitch—6,400 rpm.

CHOOSE YOUR PLACE IN AVIATION

with Embry-Riddle — Univ. of Miami training



MAIL THIS COUPON TODAY!

TRAINING AUTHORIZED UNDER G. I. BILLS

I am interested in...

- ☐ Business-Pilot
☐ Aviation Administration
☐ Aero Design and Technology

TOP POSITIONS are goal of joint Embry-Riddle-University of Miami 2-yr. Business-Pilot (flight and technology), 4-yr. Aviation Administration (BBA degree in management), and 2-yr. Design and Technology (includes engineering drafting) courses. There's no ceiling to advancement for qualified men!

- ☐ Private Pilot
☐ Commercial Pilot
☐ Instrument Rating

HIGH-PAY ACTION for men who want to move fast awaits Embry-Riddle trained pilots. Best instructors, up-to-date aircraft, superb year-round flying conditions, backed by 28 yrs. experience training today's aviation leaders.

- ☐ A & E Mechanic
☐ A & E combined with Private Pilot
☐ A & E combined with Commercial Pilot

IMMEDIATE SECURITY at good pay assured. Embry-Riddle accredited technician graduates are sought by entire aviation industry. Learn fast with modern equipment including jet... live aircraft. Combination training provides double opportunity for airman with dual pilot-technician ability.

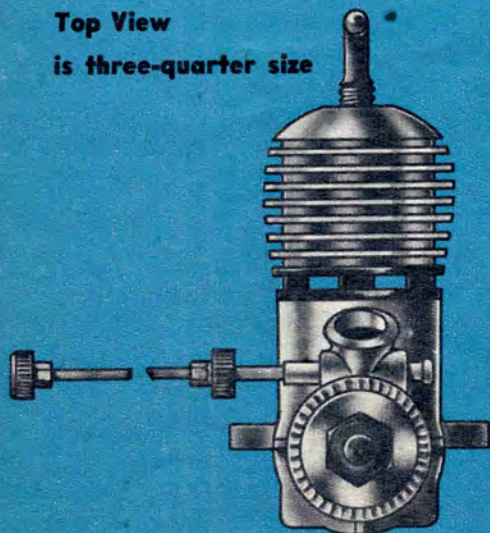
DEAN of ADMISSIONS
Dept. 97
EMBRY-RIDDLE SCHOOL
OF AVIATION
MIAMI 30, FLORIDA
Please send immediately illustrated catalog and full details on courses checked above.

Please Print

Name _____
Address _____
City _____
State _____ Age _____
I am a (check one) ☐ veteran, ☐ non-veteran.

You'll find success on the ground or in the sky with Embry-Riddle—oldest and best known name in aviation training. Accelerated 1 to 4-year courses give your career the fastest possible start... thorough, practical, up-to-the-minute training assures complete proficiency, eliminates non-essential study. Act today to live, train and play in South Florida's perfect year-round climate. Write for complete information now!

Top View
is three-quarter size



THE TIGER - Jet

SIZE ?

WEIGHT ?

ONLY 18½" LONG

MAXIMUM DIAMETER 1¾"

ONLY 5.3 OUNCES

PRICE ?

ONLY \$19.95

IF NOT AT YOUR LOCAL DEALER
WRITE DIRECT TO
EUREKA IMPORTING CO.
4264 EUCLID AVE., SAN DIEGO 15, CALIF.

POWER ?

FUEL ?

STARTING ?

2 LBs STATIC THRUST

GASOLINE

AMAZINGLY EASY

WHEN YOU BUY R/C MATERIALS FROM "ESSCO—TOPS IN RC" YOU BUY INTEGRITY & QUALITY AT LOW COST

WHAT IS THE MOST POPULAR RECEIVER WITH THE R/C HOBBYISTS TODAY?

THE ESSCO LORENZ 2 TUBER—uses the new long life (150 hours) RK-61 1st stage and the ESSCO MPC-1 wonder TUBE 2nd stage. Extreme sensitivity, long reliable range, trouble free tuning. There is no equal to this receiver, and best of all—low initial cost, low tube and battery replacement costs. Be convinced, order an ESSCO Lorenz Receiver Kit today! Consists of both tubes, wound coils, cond., resistors, drilled chassis, cable socket and plug with 25K pot. 20 min. work will complete the ESSCO Kit.....only \$4.45
Wired and tested ready for installation in your model with sensitive relay & Lord shock mount. Unbeatable value at.....\$13.95

YOU ASKED FOR THIS

ESSCO is now happy to announce **MULTICONTROL RECEIVER-TRANSMITTER KITS**. A 4 channel compact tone reel system, uses modern subminiature tubes, lowest battery drain of any equipment now on market. Can be installed in smallest size models. Highest grade materials obtainable. Complete receiver and transmitter parts package consists of all required materials. Supplied with all major mechanical work completed, enabling anyone to easily build these high grade kits. At a price everyone can afford.....only \$88.50
Wired and tested, ready for use.....\$134.50

THE ESSCO SUBMINIATURIZED TONE RECEIVER KIT—MODEL #RECR111. A complete parts kit to build your own receiver for use with Babcock and other similar units. Smaller size, lower battery drain, higher sensitivity due to use of modern subminiature tubes, complete kit.....\$19.95

THE ESSCO MODULATOR. A 400 cycle audio tone Modulator to use with your MAC II and other types of transmitters. A high quality stable unit easily connected to any transmitter. Enables you to easily change your R/C equipment over to the Audio tone system. Complete parts package.....\$5.95
Wired and tested, ready for use.....\$9.95

IMPROVED ESSCO WAQ AUDIO TONE RECEIVER. ESSCO's modern version uses 3 high efficiency subminiature hard tubes, resulting in improved performance, smaller size, lighter weight. Will fit in A size models. Only 100 ma. total filament drain. Complete tested receiver w/relay, ready to operate.....\$24.95
In kit form.....\$19.95
Complete parts kit per original writup, less relay 7.85

THE IMPROVED NEW ESSCO LORENZ MOPA TRANSMITTER. Complete parts kit of highest grade components to build your own per August MAN includes wound coils, drilled chassis, tubes, case and crystal \$17.95
A completed unit ready for use, nothing else to buy (batteries excepted).....\$34.95

THE DELUXE ESSCO LORENZ, a completed unit with built-in vibrator power pack, 2 volt rechargeable cell, with 110 volt AC and 6-12 VDC charger. Meter switching features same as our ESSCO RCX HP, as shown in our A. T. Sept. ad. Complete set ready to go.....\$49.50

THE ESSCO M-M-M Receiver. Our improved version of the Mini-Mac supplied as a completed set ready for installation at a kit price. Size 1 3/4 x 2 1/2, wt. 2 1/2 oz. w/Kurman relay.....\$14.95

THE ESSCO DMT, a dual Hard Tuber, ESSCO's improved version of the M-M-M w/2nd stage trigger tube. A super-sensitive 2 tuber with 1000 hour tube life. Completed receiver tested and ready for installation, less relay and batteries.....\$12.95
With choice of Kurman, Neumatic or ED relay 19.95

THE NEW ESSCO PIGGY-BACK-MINI-MAC. Use this novel unit to convert your Mini-Mac or the ESSCO M-M-M receiver to a dual hard tube receiver. Results in a very reliable and sensitive receiver at low cost with extraordinary long tube life. Many satisfied users advise us of their extremely fine results. Complete unit ready to attach to existing set.....\$4.95
In kit form, includes all parts, tube and drilled base with full instructions.....\$4.95

COMPONENT PARTS

NEW SIGMA RELAY —type 26F design for MODEL AIRPLANE R/C.....	\$ 8.50
BARCO Sub-mini. electrolytic capacitors, all popular values.....	1.00
Miniature 25,000 ohm Pots.....	.45
Miniature 10,000 ohm Pots.....	.45
Sub-miniature 25,000 ohm Pots.....	1.00
Sub-miniature 10,000 ohm Pots.....	1.00
Ceramic Trimmers, 4-30, 5-25, 7-45 mmf.....	.45
Tubular Trimmer, 1-5 mmf.....	.35
Variable Air Conds., 15, 25, 50 mmf.....	.45
(Equipped with screw-driver shaft)	
Linen Base Bakelite Boards, for all popular receivers, 1/16" thick.....	.25
Drilled Boards for all popular receivers (specify type).....	.75
Fleaweight hookup wire, 25 Ft.....	.25
Mica Padder Cond. Arco #308.....	.65
Mica Padder Cond. Arco #449.....	.65
Wound Coils/all receivers, 3/4 dia.....	.65
Wound Coils/all receivers, 1/2 dia.....	.55
RF Choke, wound, 10 and 20 mhf.....	.25
Closed Circuit Meter Jack.....	.40
Open Circuit Meter Jack.....	.30
(Insulated panel washers incl.)	
Standard phone plug.....	.35
Petersen 29A Crystal, 27.255 mc.....	4.75
Crystal with Socket.....	4.95
Crystal, 29A Type, guaranteed.....	3.95
ESSCO Mini-Q Coil.....	1.65
ESSCO OSR-Q Coil.....	1.35
ESSCO Q Coil/Citizenship sets.....	2.25
SLIDE SWITCHES, W/KNIFE CONTACTS	
SPST.....	.20
DPST.....	.25
Fleecaps, pkg. of 12 x .25; 25 for.....	.50
Subminiature Tube Socket.....	.15
Miniature Wafer x .10; Molded.....	.15
Special Socket for 29A Crystal.....	.20
4 & 5 prg. Min. Cable Plug & Socket.....	Pr. .15
Metering Jack & Plug.....	.15
Push Button Keyer, snap action.....	.65
New Sigma 4F, 8000 ohm.....	5.95
Neumatic, 5000 or 7250 ohm.....	5.95
ED Regular \$6.50; Polarized.....	7.50
Sigma 4F Replacement Coils, 3,000-10,000 Ohm.....	1.25

MONEY BACK GUARANTEE ON ALL ITEMS. Save cop fees, include postage, excess promptly refunded. Minimum order \$3.00 please. Send for free catalog.

FOR FAST, INTELLIGENT, FRIENDLY SERVICE ON YOUR R/C ORDERS "CALL ON ESSCO"

SERVING THE WEST

ESSCO-WEST COAST

670 Bell Street, Palo Alto, Calif.

SERVING THE ENTIRE R/C FIELD

ELECTRONIC SPECIALTY SUPPLY CO.

58 Walker St., New York City 13, N. Y.

BIKE PHOTO WINNERS



Winner of an AMF Roadmaster bicycle is John R. Grinsel of Eau Claire, Wisc., for this appealing "A Trio of Pals—a Boy, His Bike and His Dog." John entered a number of fine photos of which this was judged the outstanding.



Andrew A. Abatemarco of Flushing, N.Y., is the second winner of a Roadmaster for his timely "Think Safety—Ride Safely" specially posed photograph. "This is what happens when you don't watch out!" says Andy. Follow his advice—ride safely.



Two more happy individuals: the King and Queen of the marble set proudly pose with their new AMF Roadmaster bicycles in winners' circle at 30th annual National Marbles Championships at Asbury Park, N.J. Receiving AMF Roadmaster Luxury Liners, along with six regional winners of the tourney sponsored by Cleveland Press and associated newspapers, are the national boy and girl champs, 13-year-old Bobby Hickman of Huntington, W. Va., and 9-year-old Wanita Kucher of Chester, Pa.

JOIN THE A.M.A. And Get More Fun Out of Model Aviation

The Academy of Model Aeronautics is run by and for the model airplane flyer. It is the official governing body for model aviation in the U.S.A.—it formulates the rules for contest flying—it establishes the standard to be met by contest sponsors—and it certifies new records established by model flyers.

HERE ARE JUST A FEW OF THE MANY BENEFITS:

- A license entitling you to fly in all A.M.A.-sanctioned contests.
- Protection covering your legal public liability for personal injury and property damage at any A.M.A.-sanctioned meet.
- Official recognition of any new records established at A.M.A.-sanctioned contests.
- An opportunity to become a Contest Director or Leader Member, or both, when proper requirements have been met.
- A voice in determining all changes in rules, and the right to vote for regional and national officers of the A.M.A. and participate in A.M.A. activities at all times.
- The opportunity of obtaining Model Identification Labels; A.M.A. License Number Decals; A.M.A. Membership Buttons; Contest Kits, etc., at low cost from A.M.A. headquarters.
- The satisfaction of helping to make model aviation safer and more enjoyable for yourself and other model builders . . . of assisting in the advancement of model aviation in every section of the country through your A.M.A.
- Plus many, many more benefits.

You get all of this as an A.M.A. member! And annual dues are extremely low! A Junior License membership (for those up to 15 yrs. old) costs only \$1.50—a Senior License (16 to 20 yrs.) \$2.00—an Open License (21 or over) \$2.50. (All based on your age as of July 1, 1954.) Join the A.M.A. now!

MAIL THIS COUPON TODAY!

Academy of Model Aeronautics
1025 Connecticut Ave.
Washington 6, D. C.

Enclosed find \$..... I hereby agree to fly my models in a safe and sane manner as prescribed by the A.M.A., and apply for full membership privileges for the year 1954.

Name.....

Address.....

City..... Zone..... State.....

Date of Birth.....

Signed..... (ATH54)

(Continued from page 69)

sided, with the long end marked for a "counterweight." When the actuator is installed in the plane, and hooked to the rudder, a weight is fastened to this end of the arm which will just balance the

HOBBY CONTEST CALENDAR

List your hobby club's public shows, exhibitions and contests here! There's no charge. Advise "ATH" not less than 90 days in advance. Give telephone of contact man if possible.

Address of contact man is in the same city as site of event unless otherwise specified.

OHIO—Cleveland, Oct. 10. American Miniature Racing Car Assoc. race. Info from Carl W. Noward, 1384 Borden Ave., Toledo 12, Ohio.

CALIF.—Bakersfield, Oct. 10. Gas Modelers air-model record trials. Clinton Merrill, 212 Washington, Oildale.

SO. CALIF.—Oct. 10. F.A.S.T. Club's air-model team races. Keith Storey, 8509 Higuera St., Culver City.

MICH.—Detroit, Oct. 17. Model race car meet. See first listing.

MASS.—Boston, Oct. 18. Third annual Boston modelplane rally sponsored by the New England Wakefield Group. Lee Renaud, 330 Hyde Park Ave., Boston 30.

CALIF.—Sacramento, Oct. 24. Northern Calif. Free Flight Council air-model meet. John Lenderman, Box 216, French Camp.

OHIO—Akron, Oct. 24. Model race car meet. See first listing.

OKLA.—Tulsa, Oct. 31. Glue Bobbers' air-model radio control meet. W. H. Kehr, 4940 N. Johnstown.

IND.—Indianapolis, Nov. 13-21. Indiana Hobby & Gift Show at Mfg. Bldg., State Fairground, sponsored by the Indianapolis Star. Box 6089, Indianapolis 20. (HU 1232).

SO. CALIF.—Nov. 14. F.A.S.T. Club's air-model team races. Keith Storey, 8509 Higuera St., Culver City.

CALIF.—Bakersfield, Nov. 14. Central Valley Model Airplane Association's Championships. Francis Stewart, 900 21st St.

SO. CALIF.—Dec. 12. F.A.S.T. Club's air-model team races. Keith Storey, 8509 Higuera St., Culver City.

FLA.—Miami, Dec. 29-31. King Orange air-model meet sponsored by Exchange Club. W. M. Buchholz, 55 S.W. 8th St.

weight of the pushrod when the plane is held nose-down. This assures that you will be able to get fast and even rudder action in both directions, even during violent maneuvers, and is most important

(Continued on page 75)

birth of a star!

TD-3

ALL PLASTIC DE LUXE
READY-TO-FLY
airplane
ANYONE can fly!

BORN TO FLY, TD-3 starts instantly, requires no break-in.

TD-3 has BEAUTY... custom-designed.

POWER... for fast take-off and maneuvers.

VERSATILITY... slow or fast; stunts beautifully.

STAMINA... rugged and tough—not unbreakable, but easily mended.

TD-3 is PRACTICAL... anyone can fly it, for great fun, true economy.

Cat. No. 600 only \$10.95

Produced by

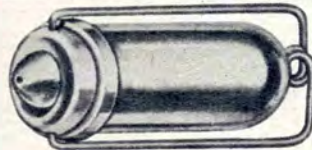
L. M. COX MFG. CO., INC.

Santa Ana, California

Oldest and Best-Equipped Manufacturers of Engine-Powered Toys and Hobby Craft

JET POWERED FLIGHT AT LOWEST COST with JETEX JET ENGINES

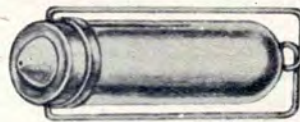
Jetex brings you power packed performance for pennies! No other form of model airplane engine brings you so much enjoyment, so many flying thrills as Jetex jet engines. Initial cost is lowest; operating costs are very moderate... there's nothing to break or wear out with Jetex. Dependable, enjoyable, and economical—that's why so many modellers prefer Jetex.



THE JETEX
"STANDARD" No. 50

Most popular of the Jetex engines. Proven dependability and performance in hundreds of thousands of flights. Including fuel; spare parts. \$1.95

Wt. 2 oz., Fuel wt. .2 oz., Thrust .6 oz., Length 1 1/2", Diameter 1 1/16". Fuel—15 pellets and wick 50¢

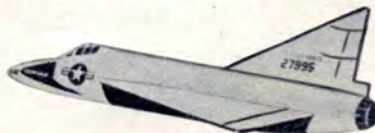


THE JETEX
"ATOM" No. 35

Specifically designed for small, light-weight, models such as the Jetex P-13. Uses a shaped fuel pellet for constant thrust. Including fuel; spare parts. \$1.75

Wt. .15 oz., Fuel wt. .10 oz., Thrust .5 oz., Length, 1 1/2", Diameter 9/16". Fuel—8 pellets and wick 50¢

F-102



Semi-scale model of latest U.S. Air Force jet. Outstanding

performance, attractive appearance. All die-cut balsa parts.

Sold complete with Jetex No. 50 engine and fuel. Excellent value. Complete \$1.95

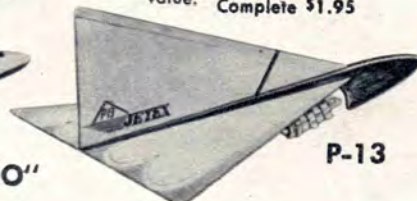
McDONNELL F88A "VOODOO"



True scale model for the Jetex No. 50. Kit includes all balsa die-cut parts. Features AEROFORMED* construction. *TM reg.

\$1.25

P-13



Spectacular flying with either the No. 35 "Atom," or the No. 50. Easy to build from all pre-cut balsa parts. 60¢

AMERICAN TELASCO LTD., Huntington, N. Y.

CANADA'S

LARGEST AND MOST COMPLETE
HOBBY SUPPLIERS

ACE—AMERICAN JUNIOR—AURORA—ALLYN—BERKLEY
—CLEVELAND—DE BOLT—FOX—GOWLAND—HAWK—IDEAL
—JETEX—MONOGRAM—McCOY—REVEL—STROMBECKER
—STERLING—SCIENTIFIC—VECO—XACTO

Write for Catalogue

MODEL CRAFT HOBBIES LTD.
66 WELLINGTON ST., WEST
TORONTO, ONTARIO, CANADA



HOLLAND Wasp

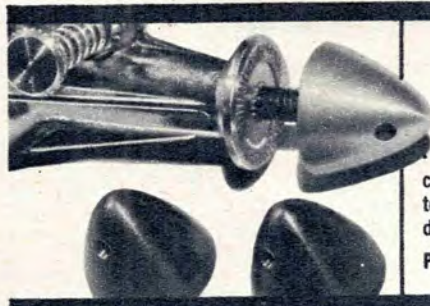
Here it is—ready to go! Powerful "Holland-built" Wasp .049 engine—matched prop, tank, quick-acting glow plug clip, wrench... "the works" in a box. Engineered by the 1948 National Champion for Championship flights.
Free Flight . . . \$5.95 U-Control . . . \$5.70

1. For use with standard propellers on pusher type airplanes.
2. The answer for twin engine airplanes with a left hand propeller on the L. H. engine in combination with a standard engine and propeller. Will eliminate torque.

SPECIAL WASP CRANKSHAFT

—Ported for left-hand rotation

Marked "L. H."—
Price \$1.75



WASP PROPELLER SPINNER

Lightweight—Streamlined. 3 brilliant colors: red, blue, yellow. Dresses up your model and protects fingers from shaft threads when cranking engine. Furnished with torque wire wrench. Fits any $\frac{1}{8}$ " dia. x 40 thread shaft.

Price \$.30 each



HOLLAND ENGINEERING CO.

12926 Satcoy Street, Unit #3, North Hollywood, California

RADIO CONTROL of MODEL AIRCRAFT



Dealers—Jobbers Write For Prices, We Are Publishers Sole Agents

LIST PRICE \$3.98

10 DAY FREE TRIAL

"RADIO CONTROL of MODEL AIRCRAFT"

by G. Sommerhoff

FIRST OF A 3 BOOK SERIES
BY SAME AUTHOR

DO NOT MISS THIS COPY, THE FIRST OF THE SERIES—CLOTH BOUND, 160 PAGES, 85,000 WORDS CRAMMED WITH RADIO CIRCUITS

Contains 4 Receiver Circuits, 3 License Free Transmitters (including Tone Control) Plus 7 Escapement and Actuator Circuits, both Schematics, plus full drawings, and instructions are included for all of above. Many of the Circuits, etc. in this book are PATENTED and have never before been shown in any other book or magazine. Multi controls give Rudder, Elevator, and Engine control all off one Receiver without sequence. Full Trouble shooting information for Commercially made sets, Plus Design charts for Slug Tuned Coils, Wire resistance charts, Quench Coil Engineering, etc. Ultra Light Weight Relay drawings, Field and Multi Range meters are also given with complete schematics and instructions.

MODEL BUILDERS. FILL OUT THIS FORM NOW (PLEASE PRINT)
SEND \$3.98 plus 10c Postage, or we will ship C.O.D. (10 day money back guarantee if not satisfied)

Name _____ Street _____
City _____ Zone _____ State _____

PAYMENT ENCLOSED () SHIP C.O.D. ()

GULL MODEL AIRPLANE CO.

10 EAST OVERLEA AVE. DEPT. A 5 BALTIMORE 6, MARYLAND



OHIO BOY, 16, WINS RANCH BARN PRIZE

■ First in the Bobby Benson B-Bar-B ranch barn model building contest conducted by "ATH" was Richard L. Amos of Hudson, Ohio. He receives \$100. Stanley Anderson, Aitkin, Minn., won second \$50. Eveready battery powered radios went to George Torda, Maui, Hawaii; Charles Keller, Kenmore, N.Y.; Teddy Barry, Albuquerque, N.M.; and Bob Fishel, Drexel Hill, Pa.

Bobby Benson and his "Songs of the B-Bar-B" program is broadcast coast-to-coast on the Mutual Broadcasting System. Consult your local listings for time and station. Follow the stories and songs of Bobby, foreman Tex and the fabulous Windy Wales; B-Bar-B ranch hands are busy hobby-model fans, off duty.



SUPER POCKET RADIO

Smaller than many hearing aids. Powerful, portable and can be assembled by anyone in one hour. Uses two inexpensive cells that fit within case. Owners report 1,500 mile reception. No antenna or ground required for local use. Complete kit of hearing-aid parts only \$3.99. Batteries extra at \$1.45. Use any regular headphone with Micro or tiny hearing-aid earset, shown in photo, available from us at low cost. Micro is guaranteed to please or return in 10 days for full refund.



\$3.99 POST-PAID

Send Only \$1.00 Bal. C.O.D.

Electronic Miniatures (AT) Manteo, No. Car.



BALSA WOOD
PRECISION SAWN FROM THE HIGHEST QUALITY BALSA STOCK

BALSA WOOD 3" SHEETS

1/32x3x36.....	.15	1/8x3x36.....	.20
1/16x3x36.....	.16	3/16x3x36.....	.25
3/32x3x36.....	.18	1/4x3x36.....	.30

WESTERN CANADIAN HOBBY DEALERS

WRITE FOR OUR LIST OF BALSA PRICES AS WELL AS OUR LATEST CATALOG



WESCAN DIST.
WHOLESALE HOBBY SUPPLIERS
PO. BOX 4272 EDMONTON, ALTA.

(Continued from page 73)
when the actuator is mounted in the cabin area, as these relatively heavy jobs usually are. The actuator shown weighs about 2 3/4 oz. Quite a lot of weight, but then it gives an awful lot of output for moderately little power input!

Parts Sources

Disc magnet, Magneto Sales Co. (261 W. 54th St., New York, N.Y.). Suppliers of other sizes of disc magnets are Control Research (1/8 x 3/4" and 1/4 x 3/4"), ESSCO and Gyro (1 1/16" dia. x 5/16" thick). Magneto Sales also has larger and smaller sizes. Magnet cores (marked "Clare No. 18845") came from Universal-General Corp. (324 Canal St., New York). Same concern can also supply relay armatures for polepieces and mounting plate. Gyro has suitable cores that are slightly longer than those used here.

Aqua-tivities

(Continued from page 15)

At the Speed Boat races, Bristol, Pa., Bob reports these results: A—1. Max Biederman, 52.69; 2. Ben Kaufman, 40.84; 3. Andy Balling, 19.04. B—1. Max Biederman, 69.23; 2. Henry Parohl, 56.25; 3. Walt MacWilliams, 39.13. C—1. Won by Bob Graham at 64.10; he was the only entry to make a timed run. D—1. Max Biederman, 74.75; 2. Ray Seavey, 63.92; 3. Bob Graham, 59.84. E—1. Fred Manderville, 63.92; 2. Bob Graham, 59.68; 3. Tom Demeskey, 42.70.

At the Bristol races, results were called on a single heat instead of the usual three, due to heavy wind and rough water. Bob asks that we correct the (Continued on page 77)

TRUE 'CHAMPS' CONSOLIDATED

1/2 A Flying Models



STUKA

Redi-carved, hollowed fuselage average wingspan 17", cut to shape wings, elevator, stabilizer. Complete with hardware, wheels, dowels. Full color decals and full size easy to follow plans. Takes .040-.075 engines. Makes a beautiful display model too.

1/2 A models @ \$2.95
FW 190
Corsair
Zero
Typhoon
Spitfire
Mustang

DECALS

Consolidated's famous collection of over 40 different designs... Colossal! Authentic! Ask For Free Circular.

JUMPIN' JACK



Prefabricated, sleek, sturdy star performer! 35" spread 23 1/2" fuselage 9" cord. Complete with exploded view drawings & instructions only \$2.75 less engine.

Write For Free Illustrated Literature

Consolidated 15th Anniversary
MODEL ENGINEERING CO.
3087 Third Avenue, New York 51, N. Y.
CONSOLIDATED MODELS...
DESIGNED BETTER—BUILT BETTER—FLY BETTER

Why Take Chances with Anonymous Fuel Line Tubing?



Be Sure!
Insist on the World's
Only Branded Tubing!

Instantly Recognizable and Unconditionally Guaranteed
STERLINE **STERL-X**

World's Finest "Hot Fuel Proof" Tubing Unconditionally Guaranteed for the Life of Your Model! In all the world, this is the finest quality tubing science has yet devised. Originally created by the U.S. Stoneware Company during the war to carry the "river of life" in blood transfusions, this tubing is flawless in quality, smooth as glass, transparent, fully flexible, will not crack—and is completely impervious to any known brand of hot fuel! For your protection in buying—the brand name "Sterline Tygon" is stamped on every piece. Look for it! Operating temperature without loss of qualities from —32°F. to 190°F.
Regular: 3/16" I.D. x 3/8" O.D. 25c ft.
Small: 1/16" I.D. x 1/8" O.D. 20c ft.

Finest Economy Fuel Line

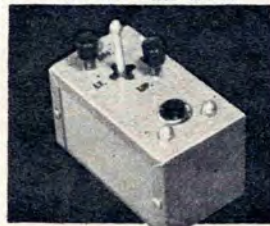
Tested and approved under the most severe vibration and exposure conditions, Sterl-X assures quick, tight connections, is sturdy, long-wearing, flexible. For your protection in buying—the brand name "Sterl-X" is stamped on every piece. Look for it! Operating temperature without loss of qualities from —16°F. to 175°F.

Large: 1/8" I.D. x 1/4" O.D. . . . 20c ft.
Regular: 3/16" I.D. x 3/8" O.D. . . 15c ft.
Small: 1/16" I.D. x 1/8" O.D. . . . 10c ft.

LOOK FOR... INSIST ON... STERLING'S BRANDED TUBING

Sterling models
1530-34 N. HANCOCK STREET PHILADELPHIA 22, PENNA.

"RAPID-PULSE" Stick Controller



The Rapid-Pulse Stick Ground Controller is simple, complete, and self-neutralizing. Move the control stick in the direction of the control desired—right, left, up, or down in any order. In addition, three auxiliary control circuits are provided which are controlled by the buttons on the stick box.

With the Rapid-Pulse Stick Controller, model response is almost instantaneous providing FULL CONTROL throughout intricate flight maneuvers.

\$13 95
PROMISE OWNERS! Write in for liberal trade in or Rotary Ground Controller on any RAPID-PULSE Stick Controller.

ECO MULTIRACE ESCAPEMENT & RAPID-PULSE STICK CONTROLLER

\$26 95

WRITE FOR COMPLETE DETAILS



The Eco Multirace Escapement, together with the Rapid-Pulse Stick Ground Controller, provides everything the radio control enthusiast could desire. With the Multirace Escapement, both rudder and elevator are fully controlled. Three additional control circuits may be selected through distributor contacts on the escapement for use as motor control, elevator trim, etc. The Eco Multirace Escapement provides full multiple control with any single or multiple channel radio equipment.

\$13 95

ECO MULTIRACE ESCAPEMENT



BOX 303 SMYRNA GA.

YOUR MONEY BACK—IF YOU ARE NOT COMPLETELY SATISFIED * Formerly ECOO Mfg. Co.

Air Trails FULL SIZE PLANS



GROUP 1154

50¢

ENCLOSE COIN OR MONEY ORDER

NEPTUNE by S/Sgt. Al St. Clair, the Air Force's outstanding free flight design, full size for .15 cu. in. power plants. Spans 50 in.; overall length is 37½ in.

SAMBA SLED by Bill Baughman provides an easy way to get started in model boating. This Half-A engine air-prop powered twin float boat is very easy to build. Length, 10½ in.; width, 7 in.

SQUEAKER is control line speed model by record-holder Tommy Baker. Takes Class A engines; spans 12½ inches; length is 13½ in.

PEGASO, world's most fabulous auto will make fine addition to your scale collection. Length, 8½ inches; width, 3½ inches; height, 2½ in.

GROUP 953A

GRUMMAN F4F WILDCAT control line flying scale by Walter Musciano. ¾" to 1" scale; takes engines from .14 to .29 cu. in.

DEVIL DART by Tommy Baker, USAF, internationally known jet speed flyer. This 18" span Dyna-Jet powered model holds national record.

GROUP 953B

HAWKER HURRICANE British flying scale control line model by Musciano. ¾" to 1" scale; takes engines from .14 to .35 cu. in.

LITTLE AUGIE by Frank Ehling is 22" swept-wing semi-scale fighter type model powered by Jetex #150 jet motor using augmaster tube.

GROUP 953C

FOCKE-WULF Fw 190 German World War II control line flying scale fighter model by Walter Musciano. ¾" to 1" scale; takes engines from .14 to .29 cu. in.

A-2 VIKING NORDIC TOWLINE GLIDER by British champ Bill Ferrance. These are half-size plans with full size ribs and cross sections.

35¢ for each complete group above

ENCLOSE COIN OR MONEY ORDER

FOR SPECIAL HANDLING

Add 9¢ per plan — 1st class mail

Add 18¢ per plan — Air mail

NEW ENLARGED, 24 PAGE DESCRIPTIVE CATALOG 9-4 ENCLOSE 10¢ TO COVER HANDLING.

HOBBY HELPERS

770 HUNTS POINT AVENUE
NEW YORK 59, N. Y.

HO REALISM and ACTION IT ACTUALLY DUMPS



ARISTO-CRAFT DUMP CAR

Really a distinctive piece of working equipment to enhance your layout. Just press a button, it d-u-m-p-s! Superbly detailed, scaled after contractor or mine hopper. \$4.50

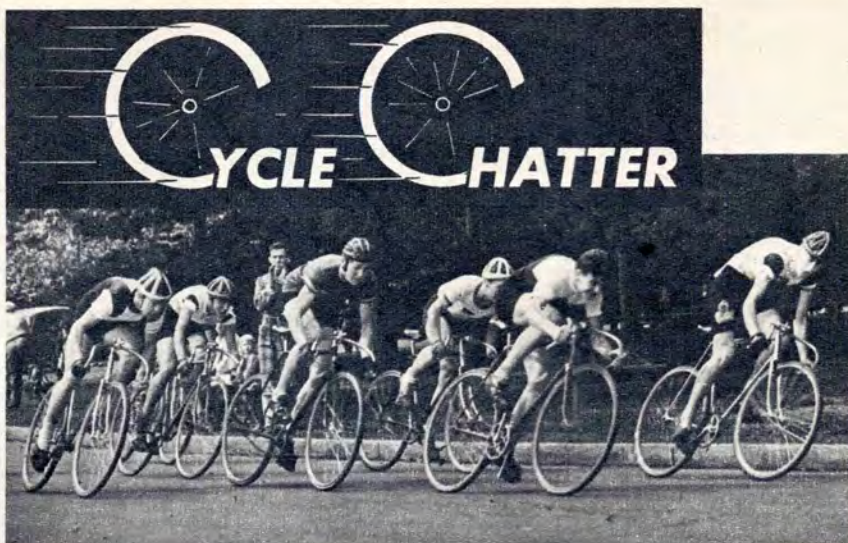
CATALOG-MANUALS: Ho and Tinplate, informative, instructive! Fully illustrated. Send now. (Contains money back coupon) Each 148 pgs. 50¢.

DEALERS:

REGULAR TRADE PRICES.

POLK'S Modelcraft Hobbies, Inc.

314 FIFTH AVENUE (Dept. H-114 New York 1)



■ M. de Sivrac, of Paris, put two upright posts on the sides of two wooden wheels and joined them with a crossbar. Thus, in 1690, the first bicycle was born. However, the inventor forgot to invent pedals and locomotion was only possible by straddling the crossbar; you'd run a few feet and then sit on it.

When Baron von Drais invented the "Draisine" in 1817, he improved on de Sivrac's model by adding a steering apparatus so that the front wheel could pivot. Though this was really the forerunner of the modern bicycle, the rider still had to keep running for locomotion.

In 1818, Baron de Saverbrum of France brought out the high-wheel bike. His best model had a 64-inch-high front wheel; the rear wheel was only 12 inches. To go forward the driver pulled on a gear-rope. It was a risky contraption to ride and many were hurt from the more than five-foot tumble.

A new type gear-rope (the bicycle chain of today) was perfected in 1821 by Louis Gumpertz of England. Then when a blacksmith from Scotland, Kirk McMillan, produced pedals with connecting rods, real advancement was made.

A high-wheeler, introduced in this country in 1866 by Pierre Lallemont of France, was constructed entirely of wood and had iron tires. This "bone-shaker," as it was called, wasn't too popular.

A sewing machine company, manufacturing high-wheelers as a side line, replaced the iron tires with solid rubber and soon afterwards replaced the wooden spokes with wire. The improvements were extremely popular with the public and convinced the manufacturers that the bicycle would be a permanent part of American as well as European life.

Thomas Stevens gave the "cycle" importance in 1884 when he made a trip "around the world" on a high-wheeler which took two years to complete. He rode, as he put it, "anywhere there was land."

With the front wheel just a bit larger than the rear one, J. K. Starley of England produced a bike in 1885 that could get up considerable speed and made easy riding despite its hard rubber tires. This model set the stage for the modern bicycle.

When J. B. Dunlop, a veterinary of Belfast, Ireland, invented the pneumatic tire in 1888, everyone just had to have a bicycle and it became the most important outdoor sport in the world.

These new developments started interest in racing contests all over the land. Men with promotional instincts made money renting chairs at the finish line of contests to tired spectators. Soon promoters built saucer-like wooden tracks which were fenced in and races were run that afforded a view of the entire race. Amateur riders accepted trophies, professionals got cash and the promoters made an enormous amount of money.

But amateur riders preferred road racing. Training for a race on the smooth sidewalks rather than the bumpy roads, they soon acquired the name "scorchers." Pedestrians were injured by the "scorchers" and it was necessary for authorities to pass laws against riding on sidewalks, many of which still exist.

Indoor racing by professionals was so popular the promoters decided to put on a six-day bike race in 1891, with the riders using high-wheelers. The contest was an international affair held in New York's Madison Square Garden. The riders had to circle around the saucer-like track as long as they could, taking time out occasionally, until a total of 142 hours was achieved.

Two years later, Albert Shock, one of the six-day contestants, experimented with the new type bicycle (as we know it today) called the "safety." He won so easily that high-wheelers were never used again.

The one-man six-day race was very exhausting to the rider. It was decided for the 1899 race in New York to use a two-man team, one relieving the other. This proved so exciting to fans six-day racing was held twice a year with record crowds attending. Not until the late 1930's did the sport fade to a losing proposition; it was finally abandoned in 1939.

With the ending of six-day racing and tearing down of all outdoor tracks, bicycle racing was taken over almost completely by amateur riders who competed as members of bicycle clubs which mushroomed in every city of the country.

(Continued from page 75)

statement that he is the Secretary of the International Model Power Boat Assoc.; actually, he is a member of the Board of Directors, the Sec. being Mrs. M. Baxmann (2991 Garland Ave., Detroit 14, Mich.). Mr. Charles Baxmann of the same address is President. Also, note corrected address for Bob, given above.

Boating Ideas. Good operating scale model boats may be made from some of the fine plastic kit craft now on the market. Robert Morris (9A Berkeley Pl., Jersey City 6, N.J.) suggests fitting an electric motor to such boats as the Revell battleship or Lindburgh LST. The hollow plastic hull affords plenty of space for a small motor and the necessary batteries; you can easily make the shaft propeller and rudder, or purchase kits of these items.

A Jasco "Aqua-Skimmer" was converted to a racing hydroplane by George Del Monte Jr. (44 Pine Brook Rd., New Rochelle, N.Y.) by cutting a 2" x 1½" wide piece from the rear end of the middle balsa block (three such blocks make up the hull of this kit model). The motor pylon was left off, of course, and a plywood transom installed in the cutout, of such height that about 1" of his electric Evinrude motor extended below the hull. He finds that with a fresh 4½ V. battery the craft runs faster than it did with the gas engine and air prop previously fitted.

The Marketplace. Boat builders who want something more elaborate than the usual one-lung glow engine for their boats should check the products of Pal Engineering Ltd. (53 16th Ave. S.W., Cedar Rapids, Iowa). Concern manufactures two and four cylinder engines of

THUNDERSTREAK

by **enterprise**

FULLY EQUIPPED

ONLY \$750



READY TO FLY IN ONE HOUR

DeLuxe real engine powered flying model airplane. Complete with control handle and control lines, Propeller, and all decals.

- READY TO ASSEMBLE AND FLY
- ALL FINISHED PARTS
- YOU MAKE IT IN ONE HOUR

This airplane is made of genuine light weight . . . **BALSA WOOD**

"BALSA MODELS FLY BEST"



Complete with Instant Starting Space Bug Jr. engine

ENTERPRISE
MODEL AIRCRAFT MINEOLA, NEW YORK

If no local dealer is convenient, mail orders will be filled by Enterprise Model Aircraft Dept. T.S. Mineola, N. Y. Please include 25c packing and postage.

KOREAN BATTLE TANKS

Designed From Info and Photos Supplied by U. S. Army Ordnance



USA Gen. SHERMAN
11½" Long

\$2.95 EACH
PLUS 25¢ POSTAGE



11½" Long
USA PATTEN '48



12" Long
USA T41 'BULLDOG'



13" Long
USA Gen. PATTON



12" Long
German 'Tiger'



14½" Long
Russian 'STALIN'

WITH ROTATING 'ACTION' GUN TURRET

A complete line of Korean and World War II battle tanks by MERCURY. Simple construction from full-size plans. Build authentic models for your den or library. SCALE: 1 inch equals 2½ feet.

FEATURES: DIE-CUT BALSA PARTS • LIGHTS ROTATING TURRET • METAL AIR VENTS AND GRAB IRONS • PLASTIC PARTS • DECALS • FORMED BOGIE WHEELS • SHOVEL AND PICK AXE CONTOUR SHAPED BALSA • FULL-SIZE PLANS

AT ALL DEALERS—If Out of Stock Order Direct

• MERCURY MODEL •
920-ALL UTICA AVENUE • BROOKLYN 3, N. Y.

Most Practical Radio Control Available to Modelers Yet!!!

The New, Dependable RA-CON 5-CHANNEL R/C

that gives complete control of rudder, elevator, and motor speed without pulsing an escapement.



RA-CON TR-5, 5 channel receiver weighs 8½ oz.—extremely low current drain made possible by using sub-miniature tubes. One simple tuning adjustment. Housed in rugged aluminum cover. A reliable resonant reed receiver—Deluxe in every respect.

Price with tubes, relays, connectors and instructions — only **\$99.50**

RA-CON TT-5, 5 channel transmitter with a telescopic, detachable antenna. Weighs 4 lbs. with batteries. Housed in sturdy metal, gray hammertone case (3 x 5 x 10) completely self contained, hand held type, with 5 push buttons for all controls. License—free freq. (27.255 MC).

Price including tubes, crystal, antenna, less batteries, only **\$60.50**

RA-CON TI-5 installation kit contains receiver connector, coded wire, battery connectors (2) SPST on-off switches, phone jack, meter jack. Highest quality items that simplify receiver installation. Price only **\$3.25**

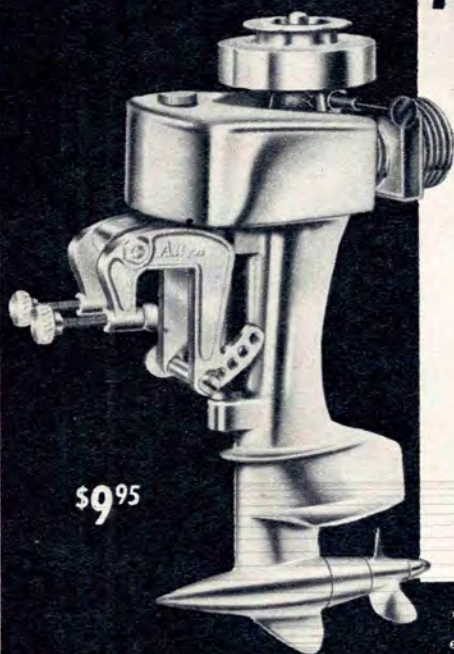
Bonner Servos, available at moderate prices are highly recommended. Resonant Reed Assembly, 5 Channel **\$19.95**

TERMS: Cash with order or ½ with order and balance C.O.D. **NOTE:** On prepaid orders, we pay freight, dealers inquiries invited.

RA-CON ENGINEERING CO.
8556 Firestone Blvd. Downey, California

ON THE SEA.....

SEA FURY .049



\$9⁹⁵

The Pair to Buy

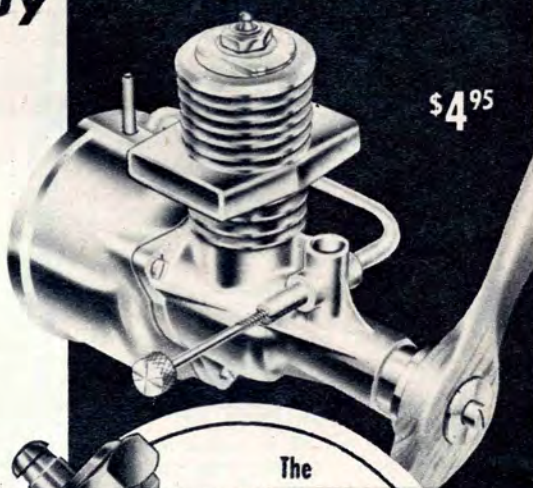
The quick starts, smooth running, and high speed of the SKY FURY .049 will have your plane up in the air for championship performance each time you fly it. It requires no break-in period and flies in any position. Buy a SKY FURY for the most fun you have ever had with a model plane!

The scaled realism and beautiful performance of the SEA FURY .049, as it sends your boat skimming across the water at new speeds, will convince you that it is what you have been waiting for. To further assure you of continuous and added pleasure the SEA FURY is equipped with a pivoted bracket for directional control and two swivel clamps with 5 transom adjustments.

*The FURY engine is especially engineered for an outboard power-head to give you a continually cool-running motor.

IN THE AIR

SKY FURY .049



\$4⁹⁵

The
FURY Glow-Plug
with the
Wonder Element

Due to length and depth of the Wonder Element the FURY Glow-Plug operates at peak efficiency in all types of glow-plug engines. The particular shape also affords greater strength for longer life. Try a FURY Glow-Plug and you can hear the difference.

65c

Allyn SALES COMPANY, INC., 6425 MCKINLEY AVE., LOS ANGELES 1, CALIF.

INTRODUCING THE New F-B BASIC TRAINER

It's Neat!

THE BASIC TRAINER has aluminum landing gear, complete hardware (pre-fab—only 7 parts to bolt and glue together), ready to fly in an hour; for engines .14 thru .35. Class A-B & C. Sells for... \$2.95



By mail
add 25c

F-B Planes give the beginner or experienced model builder a chance to get real enjoyment out of the most exciting modern pastime.

SELECT YOUR NEW MODEL FROM THESE F & B WINNERS!

Chevrolet Corvette
Jeep Station Wagon
Chrysler Imperial Sedan
Jaguar XK120
Nash Rambler Convertible

Stinger Stunter
P-T Trainer
Viking
Folly 1/2A
Combat Sky Box

Sharpie Stunt Plane
Vampire
Vixen Stunt Ship
P40F Warhawk
F & B Hinges

F-B MODEL AIRCRAFT — 3240 LARIMER — DENVER 5, COLO.

lightweight design, and they can be had in both air and water-cooled types. The two cylinder types are in-line style of .55 cu. in. disp., and alternate-firing; four cylinder engines have opposed cylinders and 1.10 cu. in. capacity. Reduction gears will be available for latter.

We have heard plaintive cries from the speed boys (car, boat and plane) over the scarcity of nitro methane and other hot fuel components for mixing their own. Check "Round the Track" in this issue for source of these liquids, and ready-mixed hot fuels.

Everything Under Control

(Continued from page 16)

Kenton Brenegan (New Castle, Del.), Beam with rudder only. 3. William Street (Baltimore), Beam with rudder only. Interesting to note that above three all used Mac II transmitters; in fact, there were eight of them at the meet! Large majority of entrants had rudder only—18 of these, as against a total of 9 who had various multi-control combinations. Very successful card system assured that all had a chance to fly; for details on this, write to Herb Hon-ecker (8105 Tahoma Dr., Silver Spring, Md.), Sec. of the D.C.R.C. Club, which ran the radio event. Transmitters of all contestants were impounded, and handed out only when an official flight was due.

Commercial Topics. Good news for the users of gas tubes is seen in the announcement by Raytheon that an improved model of the popular RK61 gas tube has been under production for some

America's Famous Helicopters for Your Prize Collection

*Official Scale Models Win
Acclaim of Experts Everywhere
for Authentic Detail!*

THE SIKORSKY \$2.49

with official insignia in Army olive drab, Navy blue, Marine blue, Air Rescue Service gray, and Coast Guard yellow.

With Pontoons \$2.98



HILLER HORNET \$2.49

with official insignia in Army olive drab, Navy blue, and Civilian red.

THE PIASECKI \$2.49

with official insignia in Army olive drab, Navy blue, Marine blue, Air Rescue Service gray, and Piasecki Workhorse silver.

With Pontoons \$2.98



*So Real-looking You'll Think
They're About to Take-off!*



THE PIASECKI HUP \$1.49

with official insignia in Navy blue, Marine blue, Army olive drab, and Air Force silver.

Now Own History-Making Helicopters!

Each model is precision molded, detail for detail, in sturdy polystyrene plastic. These easy-to-assemble kits include handsome display stand, detailed assembly instructions and fascinating history of the helicopter. Dramatic natural color action picture on box cover excellent for framing. They're real prizes for your plane collection.

AVAILABLE AT YOUR FAVORITE DEALER

and fine stores everywhere, or write direct to us. Enclose check or M.O. plus 25¢ for postage and handling. No C.O.D.s. Specify model and color.

HELICOPTER GUIDE by "Les" Morris



The only book of its kind! Written by one of America's first and foremost helicopter pilots. Tells you everything you want to know about helicopters. Gives detailed, easy-to-understand instructions and diagrams on how to fly a helicopter. Jam-packed with illustrations and facts.

\$2.00 PER COPY

Add 10¢ for postage and handling.

Helicopters for Industry Inc. • 111 Cathedral Avenue, Hempstead, N. Y.

time. While the tube looks just like the former RK61 and costs the same, it has a life at least five times as great! Characteristics are the same, too, but the new production tubes may be found to draw considerably greater plate current when installed in a receiver without readjustment of the controls. Usually, all that needs to be done is to increase the setting of the variable plate resistor, and possibly touch up the tuning a trifle. As in the past, the RK61 will be sold only through R/C suppliers, hobby dealers, etc.—not from the factory.

Rugged five-pole PM battery motor is stocked by Herbach & Rademan (1204 Arch St., Philadelphia 7, Pa.). Motor has open steel frame, ball bearings, carbon-tipped brushes, weighs 2.7 oz. It is a product of Wilson, and comes with a small pulley, four gears including a worm, is intended for 3-6 V. Price is \$4.00 and stock No. is TM6408. H&R also offer a relay, No. TM4283 for \$2.50, identical to that described in last paragraph in this column, p. 60 of Sept. '54 issue. This concern issues free monthly bulletin listing many items of interest to R/C experimenters.

Sigma Instruments Inc. (Pearl St., So. Braintree, Boston 85, Mass.) who have long been suppliers of the Sigma 4F and 5F relays, considered by most experimenters to be tops in their field, are coming out with a new one—the type 26. This has been designed especially for R/C uses; it will weigh 2 oz., be slightly smaller than the 4F, and have considerably more resistance to shock and vibration. Will also work reliably on lower current; standard factory setting will be .6-7 ma. to close, with opening about .1 ma. less. Coil resistance is 8000 ohms, and price is \$8.50 each. The Sigma 4F relay will still be available for \$7 in

RADIO CONTROL OF MODELS

G. SOMMERHOFF, M.A.



TRANSMITTERS RECEIVERS ESCAPMENTS
SERVO MOTORS RELAYS ACTUATORS
EXAMPLES OF COMPLETE CONTROL SYSTEMS

3 NEW RADIO BOOKS

"RADIO CONTROL OF MODELS"

Another fine book by Mr. G. Sommerhoff (not part of 3 book series). This is an excellent introduction into Radio Work for the beginner, plus some of the most unusual types of models featured in any Radio Book. Attractive two-tone cover, all pages on art paper, 43 photos all types of equipment. Dozens of complete schematics, etc. These are all fully explained and may be made up direct from the instructions in the book. Features a Model Boat of only 25 inches which has 22 DIFFERENT CONTROLS all off of ONE TUBE RECEIVER, giving Rudder, Speed, Guns, Torpedos, Radar Screen, etc. all under control. Radio controlled JEEP also shown. Explanations of, plus drawings, for Self-Zeroing Selector Switches, Delay Action Relays, Reed Units, Pulse Rate Units. Also controls via long and short pulses. Do not let low price mislead you, as it contains hundreds of items never before shown.

Price \$2.50 ()

"RADIO CONTROL of MODEL SHIPS BOATS and AIRCRAFT"

Written by Mr. F. C. Judd, world famous Development and Radar Engineer. Attractive 3-tone cover, all of its 140 pages on gloss paper. Contains over 50 photos of equipment, many full page photos, plus over 200 circuits and sketches. Explains how to electrify your rubber driven escapements, make complex multi-action actuators from clock and watch mechanisms, cam control actuators, etc. Aerial charts never before shown. New Relay drive selector switches. Parallel line oscillators. Also shows 40 TUBE MONSTER RECEIVER, plus RECEIVER with 8 CHANNELS, 12 RELAYS controlling 6 SERVO MOTORS. Simple one, two & three tube units also given. The combination of the Schematic, plus instructions and photos of the finished units help you to produce the items shown in the book for your own use. Practically any type of Boat or Aircraft can be controlled with the use of the equipment shown.

SEE THE 40 TUBE MONSTER RECEIVER AND OTHER INTERESTING CIRCUITS

Price \$3.98 ()

• Also available "RADIO CONTROL OF MODEL AIRCRAFT" - \$3.98 () • First of a series of 3 by Sommerhoff, 2 more to follow later.

PIRELLI RUBBER

NOW REDUCED IN PRICE - Famous Wakefield rubber 1/4", full 270 ft. per hank was \$6.50 - NOW - - - \$4.98 () SPECIAL 40 ft. hanks - - - only \$1.00 ()

LOOK! ONLY 25c

New 84 page plans catalogue, over 400 different models. FREE copy "AERO-MODELER" plus pamphlets showing page samples of above books, all 25c.

Check order above, add 10c postage per book. Print name, address in column this ad.

GULL MODEL AIRPLANE CO. 10 E. Overlea Ave. Dept. A 6 Baltimore 6, Maryland





STANDARD CONTROL LINES

Dia.	Length	List	Dia.	Length	List
.004	2-35'	.35	.008	2-70'	.75
.006	2-52'	.50	.010	2-70'	.75
.008	2-52'	.60	.012	2-70'	.75
.010	2-52'	.60	.014	2-70'	.75
.012	2-52'	.60	.016	2-70'	.75
.014	2-52'	.60	.012	2-125'	1.00
.016	2-52'	.60	.012	Jet Wire	
				1-100'	.25



1/2 A NYLON HANDLE 39c

The only 1/2 A handle on the market. Instantly adjustable with pre-formed ends.

STANDARD FLEXIBLE LINES

Dia.	Length	List	Dia.	Length	List
.008	2-35'	.65	.018	2-52'	1.50
.008	2-70'	1.25	.018	2-70'	1.95
.012	2-35'	.95	.021	2-70'	2.15
.012	2-70'	1.95	.018	2-85'	2.25
.015	2-52'	1.50			
.015	2-70'	1.95			

Flexible Lead Cable.....	.25
Flexible Lead 1/2 A.....	.15
Class A Race Car Cable.....	.65

Plastic CONTROL HANDLE 85c

With the original pre-formed ends. Instantly adjustable, no tools needed. Assorted colors.



INSTANT USE FLEXIBLE LINES

Dia.	Length	List	Dia.	Length	List
.008	2-26'	.85	.015	2-60'	2.00
.012	2-35'	1.25	.018	2-60'	2.00
.015	2-52'	1.85	.018	2-70'	2.30
			.021	2-70'	2.50

Watch for the New
Indestructible Super Head
Gasket . . . Coming Soon!

OTHER PYLON BRAND ACCESSORIES

2 oz. Bulb Fuel Pump.....	59c
4 oz. Bulb Fuel Pump.....	79c
Medium Nylon Bellcranks.....	20c
Large Nylon Bellcranks.....	25c
Stunt Tanks (Plastic), small.....	75c
Stunt Tanks (Plastic), medium.....	95c
Stunt Tanks (Plastic), large.....	\$1.25
1/2 A Dacron line, 52'.....	25c
Bubble Canopy, 1/2" scale.....	25c
Bubble Canopy, 1" scale.....	50c



Sullivan Products

214 W. DAUPHIN STREET PHILADELPHIA 2, PA.

the 8000 ohm size. Contacts on the 26F 8000-CDS (its full type designation) are palladium, but gold and silver may be had for special applications.

New address for Ace Model Supply will be 368 E. Whittier Ave., Fairborn, Ohio. Hottest item being sold now is the super-light and small SM-1 single hard tube receiver, which costs \$11.95 with tube but less relay, fully wired and tested.

After altering phono jacks in our own shop, to make them closed-circuit type—which doesn't need a separate shorting plug when the test meter is not in place—we find that ready-made closed circuit jacks of this type may be had at some radio suppliers. They are apparently made by RCA, so check your local RCA dealer for this handy item. Standard phono plugs fit it.

Tiny relay suitable for many R/C purposes is made by Jaico Mfg. Co. (1921 W. Hubbard St., Chicago, Ill.). Called the Gem, it has heavy SPDT silver contacts, coil resistance of 5000 ohms, weighs .45 oz. Extra insulated lugs on it make handy tie points for arc suppressors. Price is \$6; lower resistance coils cost considerably less. Comes adjusted to close at 1.4 ma., open at 1.2 ma.

Available from factory now and will be sold through hobby dealers later.

Single hard tube receiver which has been quite popular in the Midwest will now be sold nationally. It is made by Bob McDonald (619 E. Budlong St., Carthage, Mo.) and comes in two styles. Model S1 uses a 3S4 tube and will give relay current as high as 3.5 ma.; Model S2 has sub-min tube, runs at considerably less A and B current. S1 style has base 1 1/4" x 2 1/4" and weighs 2 1/3 oz. with relay and tube; cost is \$14.95 complete and ready to use.

HAW-KI HOBBY SUPPLY CO. WHOLESALE ONLY

ALL NATIONALLY ADVERTISED
MAKES

- ★ MODEL AIRPLANES
- ★ RACE CARS
- ★ RAILROAD EQPT.
- ★ CRAFTS AND TOYS

WRITE

Today on your
business letterhead
for current catalog.

**PROMPT
SPEEDY
DELIVERY**

HAW-KI HOBBY SUPPLY CO.

DEPT. ATH-3 523 WEST 4TH

Davenport, Iowa



CONTROL AND EQUIPMENT
RESEARCH, DEVELOPMENT AND PRODUCTION

MICROVONICS; [aeroc & data]!

NEW AUTOMATIC PROPELLER

TALMCO MICROVONICS CAN NOW OFFER TO BUILDERS OF RADIO CONTROL, LINE CONTROL, AND FREE FLIGHT MODEL AIRCRAFT THE MOST EFFICIENT PROPELLER AVAILABLE TO DATE, A PROPELLER THAT WILL INCREASE THE PERFORMANCE OF ANY ENGINE (OF FROM .05 TO .30 cu in DISPLACEMENT) AS MUCH AS SIXTY PERCENT.



THIS AUTOMATIC, VARIABLE PITCH, FULL FEATHERING PROPELLER, DESIGNED BY ARTHUR E. ELMER, WILL ADD TO THE PERFORMANCE OF ANY MODEL UPON WHICH IT IS INSTALLED. IT IS ESPECIALLY ADAPTABLE TO ENGINES EQUIPPED WITH TWO SPEED CONTROLS.

DURING TAKE-OFFS, STEEP CLIMBS, AND OTHER HIGH LOAD MANEUVERS, THE BLADES ARE MAINTAINED IN LOW PITCH AUTOMATICALLY, ALLOWING THE ENGINE TO PRODUCE FULL POWER. IN NORMAL CRUISE ATTITUDES, THE BLADE PITCH FUNCTIONS AS A CONSTANT SPEED GOVERNOR, ADJUSTING THE ENGINE R.P.M. TO THE LOAD CONDITIONS. EXCELLENT WIND PENETRATION AND FUEL ECONOMY ARE THUS ATTAINED. WHEN THE AIRCRAFT IS IN A DIVE OR THE ENGINE IS THROTTLED BACK, THE AUTOMATIC HIGH PITCH MAINTAINS LOW, CONSTANT R.P.M. AND PREVENTS OVER SPEEDING OF THE ENGINE, ALLOWING LOWER SETTINGS ON TWO SPEED CONTROLS.

IN CASE OF ENGINE FAILURE, OR POWER SHUT OFF, THE PROPELLER WILL AUTOMATICALLY FEATHER, REDUCING DRAG DURING THE GLIDE, OR INTERFERING WITH THE TRIM OF THE GLIDING AIRCRAFT.

Complete propeller with installation data and tools. Specify engine make..... \$ 5.35 ea.

NON-FLOODING TWO SPEED CARB.

TWO SPEED CARBURATORS WITH THREE POSITION SOL-INNOID, HIGH, LOW AND OFF, WILL NOT FLOOD AT ANY SPEED. SEND FOR FREE BULLETIN TM-2036 FOR COMPLETE DATA, OR ASK YOUR DEALER FOR INFORMATION.

All Talmco Microvics products are available to the better hobby shops in the United States and Canada. In cases where our products are not available through local dealers, they may be obtained from: TALMCO MICROVONICS, Post Office Box 125, Oakland Gardens Sta., Flushing, L. I., New York. All correspondence should contain return postage. No C.O.D. orders can be accepted.

another FIRST from pactra AeroGloss



**FIRST
HOT FUEL
PROOF DOPE
in SPRAY CANS!**

Fellows—
when you
want that
championship

finish on your model plane—
SPRAY IT ON! Full 12
ounces \$1.95. Ask
your dealer . . .

Re-usable No
Klog Trigger Valve
Now Only 10c

**FIRST in Sales, FIRST in Quality,
FIRST in Performance!**

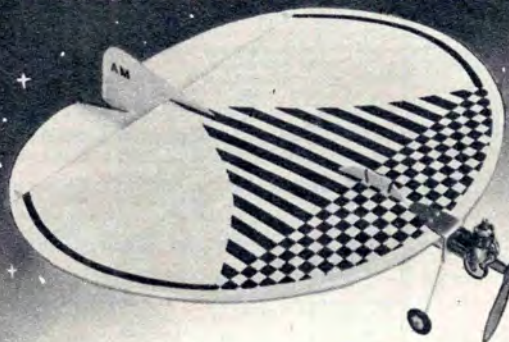
Aero Gloss—A TRUE AIRPLANE DOPE! Adds strength to your plane. REALLY HOT FUEL PROOF! No more time-wasting extra coats. BINDS TO SURFACE! Won't crack or peel. QUICK PATCHING! Saves time and model planes. SMOOTH HIGH GLOSS! For high-speed no-resistance air flow!

pactra

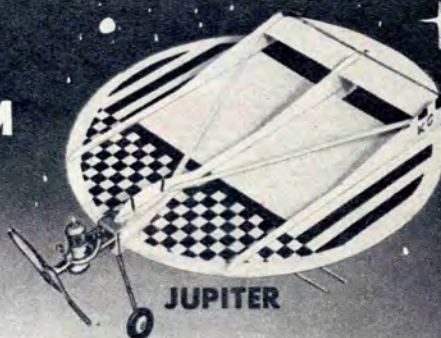
Chemical Company
1213 N. Highland Ave.
Los Angeles 38, Calif.

Air Trails HOBBIES For Young Men

Flying Saucers are REAL! AND ONLY AMCRAFT HAS THEM



VENUS



JUPITER

These planes are OUT OF THIS WORLD!

Be the first in your group to fly one!

The JETSTER Finest of all trainers. Solid wing, symmetrical airfoil. Rugged. Flies inverted **\$3.50**

VENUS 21" diameter 1/2A free flight model. Its tremendous wing area (350 sq. in.) enables it to climb faster, soar longer. (.02-.074 engine)..... **\$2.50**

JUPITER Unique 1/2A control line model with 15" diameter wing. Flies inverted, performs all maneuvers, instant response. (.049-.09 engine) **\$2.50**

Both kits contain all preformed and die cut parts, including metal landing gear and motor mount, all rubber wheels. Jupiter also has elevator hinges, push rod, elevator horn and lead out wires. Either kit can be ready to fly in two hours.



"19" to "29"
Engines

WHEELS

2" diameter. Authentic-looking, solid rubber. Brass bushing included. Set of two..... **35c**

If unobtainable from your dealer order direct adding 25c postage and handling.

Amcraft

2 BARRINGER AVENUE, SCHENECTADY, NEW YORK

Two new products available from Berkeley Models Inc. (West Hempstead N.Y.); one is improved version of sensitive relay Berkeley has been selling; it is a 5000-ohm job and can be set easily to work around 1 ma., with differential of 2 or less.

The setting is made easier since beefed-up contact arms now carry screw contacts. Weighs just the same as older model—1.1 oz., and sells for \$7.50.

Other "product" is 72-page book of R/C information intended mainly for the beginner to this hobby. Book contains no construction data at all, is designed to aid the builder in choosing his plane and equipment, putting it into the model so it will work the best, keeping it working, trouble-shooting, etc.

This little volume has chapters on making various maneuvers, field operating procedure, R/C boating, also a glossary of common R/C terms. Book is loaded with practical hints for the inexperienced.

It sells for \$1.00.

Samba Sled

(Continued from page 26)

fashioned in the lake can be set up with a little experimenting.

BILL OF MATERIALS: 1/8" plywood sheet 7" x 12", 1/8" balsa (medium) sheet 2" x 36", 3/16" x 1/4" x 7" oak strip. Scrap aluminum, approximately 1/16" thick, from surplus store, 12" x 4". 3 envelopes of Perfect mounting bolts. 1 #4 Perfect fuel tank (or equivalent). Scrap brass or tin for rudder 1" x 2". Small length of small diameter fuel line. Cement, Weldwood glue, finishing material, sandpaper, your engine and propeller (a 5" prop will probably prove just about right for most 1/2A engines).

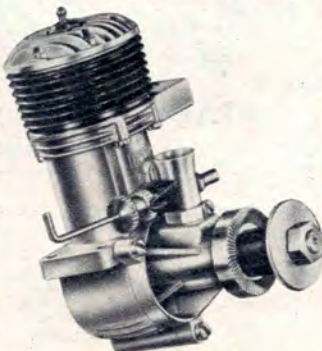
stand out

FORSTER

PERFORMANCE

"The Finest
Money Can Buy!"

is the pay-off! the Best Deal Yet!



MODEL F-29 \$11.20

To clear the flying fields of worn out, balky old engines — to give thousands of modelers a fresh start with a truly top quality engine, we make this sensational offer:

Mail your old engine to us, no matter what make, size or condition, even though some parts are missing! We will allow you \$5.00 for it in trade towards a brand new FORSTER front rotary valve engine! Your old engine and only \$6.20, plus 35c for postage and handling, will bring you the latest and best model F-29 FORSTER engine, made by the oldest established model engine manufacturer in the U.S.A. and known the world over for outstanding precision, performance and fuel economy.

This is a limited offer, good at the factory only!

Be a wise bird about ENGINES —

Write us for free descriptive literature.

FORSTER BROTHERS, 8 LANARK AVE., LANARK, ILL.

GYRO

FREE-New Radio Control Catalog
The Most Progressive & Reliable
RADIO CONTROL SUPPLIER

NEW! 2-Tube HARD-TUBE RECEIVER:
Sensitive, Easy Adjustment (M.A.N. Sept. '54)
complete kit of parts (less tubes & relay)..... \$ 5.95
Gyro DIRECTOR TRANSMITTER KIT, with cabinet, crystal, tube, antenna, keying switch..... 12.45
Wired & tested..... 17.95
LORENZ RECEIVER KIT, with HARD TUBE 2d stage & Sigma 10,000 ohm relay..... 9.85
Wired & tested..... 14.95
NEW! FIELD STREET METER, with crystal & wound coil..... 1.35
with 0-3 Ma. Meter \$3.75; wired & tested, add 1.00
SUPER SENSITIVE 64 TUBE perfect for MINI-MAC or 2d Stage LORENZ RECEIVER..... 1.95

AWARDED AS 1st PRIZE, N. Y. MIRROR AIR SHOW
IMMEDIATE DELIVERY. The most POWERFUL (5 Watt) TRANSMITTER at the LOWEST PRICE. Famous 2 Tube MAC II circuit, featuring GYRO MAGIC TUNING INDICATOR. Completely wired & tested. Includes 9 1/2 ft. sectional Antenna, remote "clicker" Keying Switch, Meter, Ground plane Booster, Shorting Plug. Beautiful Cabinet: 12" x 7" x 6". Available in the following models—all with money-back GUARANTEE.
GYRO XI TRANSMITTER, as described with built-in 2 Volt Battery, 2 Volt Vibrator Supply, Battery Charger. Nothing else to buy. GUARANTEED—Complete..... \$29.50
GYRO X2 TRANSMITTER, as described, with built-in dynamotor for operating from 6 Volt Auto battery. 2d Stage—Complete (less battery)..... 31.50
GYRO X3 TRANSMITTER, as described, but for dry battery operation, and using Powerful 1-tube, 4.8 Watt low-drain circuit. GUARANTEED—Complete (less Batteries)..... 23.95

MODEL X. MAC II. 2-tube TRANSMITTER UNIT, as used in Gyro transmitters. Only 3"x4"x1 1/2", wired and tested. Complete. Install in your case with tubes & crystal. Above unit in kit form, with tubes and crystal. Brand New 2 V. VIBRATOR TRANSFORMER, used in PE157. Output 180-135 V. @ 35 Ma. 3.50
NEW! STOP WASTING MONEY on 2nd batteries for your transmitter. Add our 2-VOLT VIBRATOR SUPPLY to any transmitter; output 135 to 180 V. Kit, with parts, assembled..... 10.95
NEW—2 Volt Battery Charger. Wired & Tested BATTERY CHARGER KIT..... 4.95
NEW BEEP BOX, with any transmitter & self-neutralizing escapement. NOT A KIT..... 1.95
Low Cost PROPORTIONAL CONTROL added to any Transmitter & Receiver. Works with any Actuator. COMPLETE KIT of parts & diagrams for TRANSMITTER PULSER, incl. battery & case 6.95
ADAMS ACTUATOR with 1/2" dia. shaft..... 5.95
SOUTHWESTERN ACTUATOR..... 5.95
PE 157 SUPPLY for Mac II Transmitter..... 11.95
LORD SHOCKMOUNT..... 1.15
RELAYS: E.D. 5,000 ohms, \$6.50; NEOMATIC SIGMA 4F RELAYS 8,000 ohms..... 5.95
2,000, 3,000 or 10,000 ohms..... 5.95
SIGMA 41FS, Sensitive 10,000 ohms—SPDT..... 1.45
OSR type Quench coils 1 1/2" dia. 2.25
WHIP ANTENNA, 3 sections, 9 1/2 ft. 2.25
Antenna with base mount..... 2.75
FLA CLIPS, 4 for 10c, 10c MAGNET for proportional control, 1 1/2" dia. .95
R/C DIAGRAMS: 6 pop. XMTS. & RCVRs..... .25
RADIO CONTROL RECEIVER KITS 27 1/4 Mc
NOTE: All GYRO kits are guaranteed complete deluxe types with diagrams—nothing else to buy!
LORENZ 2 TUBE with 2 pots. & wound choke..... 3.35
Complete with 2 Gas Tubes & SIGMA 4F Relay 14.15
MINI-MAC w. Spec. Quench Coil, Wound Choke Complete with CK526 Tube and ED RELAY..... 11.45
MILLER or SIMPLE SINGLE with OSR type QUENCH COIL & wound choke..... 4.45
Complete with Tube & SIGMA 4F Relay..... 9.80
MILLER, 50.95; SIMPLE SINGLE..... 9.80
JOHNSON 2 Tube, with SUB-OSCILLATOR CIRCUIT..... 4.75
Complete with 3 Tubes & SIGMA 4F 3000 Relay 13.85
ABOVE KITS with drilled base & wound coils, add ABOVE KITS wired & tested, ready to operate, add 5.00
TRANSMITTER RECEIVER KIT, Parts and diagrams (less tubes & crystal) to build famous MAC II Transmitter Unit and LORENZ RECEIVER, with 10,000 ohm relay..... 9.95
MINI-50 RECEIVER KIT, with 1A64 Tube, wound choke Quench Coil, Neomatic Relay..... 11.45
ESCAPEMENTS
CITIZENSHIP BONNER MINI..... 5.95
SUPER AEROTROL..... 3.95; ED MARK III..... 5.95
BONNER COMPOUND, makes 1 channel duplicate 3 channel control..... 14.95
Camaron COMPOUND ESCAPEMENT..... 8.95
CRYSTALS, 27.25 Mc Peterson ZOA..... 4.75
Crystal holder..... .15
SAVE 5%—Deduct 5% from any of the kit prices when ordering with any escapement.
Money Back Guarantee! FREE—With \$12 order or more, choice of a "Radio Control Basics" Book, Insulated Screwdriver, Toy Electric Motor Kit or Voltmeter 0-3V.; Send for New FREE Catalog A-2.
Save C.O.D. fees, include postage, excess refunded.

GYRO ELECTRONICS CO.
325 Canal St., New York 13, N. Y.
Telephone: WOrth 6-1290

BIG BAG of STAMPS only \$1.00
WHAT TREASURES WILL YOU FIND?
Exciting Treasure Hunt! More than 1,000 stamps from over 90 countries in Asia, Africa, Europe, etc., unopened, unused, just received from foreign missionaries, banks, etc. Nobody knows what's inside! Guaranteed worth over \$10.00 at Back Catalog prices or your money back. Only \$1.00. Write TODAY!
H. E. HARRIS & CO.
764 Transit Bldg., Boston 17, Mass.

FREE—VALUABLE U.S.A. STAMPS!
Scarce genuine postage stamp as illustrated, picturing first U.S.A. (issued in 1847); PLUS big collection of 30 all-different United States: 19th century, valuable \$5.00 stamp, etc.; PLUS packet beautiful Commemorative stamps including 1893 Columbian, Boy Scouts, Wild West, many others. Big illustrated U.S. catalog included if you send TODAY! Everything for 10c to cover mailing expense only! Approvals.

H. E. Harris & Co., 90 1 Transit Bldg., Boston 17, Mass.

Trained Technicians

(Continued from page 53)

Houston, School of Technology, 3801 Cullen Blvd., Houston 4, Tex.

Industrial Technician

Most technician training includes some general subjects. The aim here as in all education is to produce not a machine but an integrated individual who understands his world and can get along with its people. One purpose of technician training is to fit you for stepping into supervisory and coordinating jobs, to act as a go-between—which calls for lots of general knowledge and human savvy. An excellent example of a course which has its leavening share of non-technical subjects is industrial technology.

Like the industrial engineer, whom he assists, the industrial technician has quite a bit to do with people. His job is to help get the greatest possible efficiency in production, and that takes in quality control, time and motion study, personnel placement, job evaluation, wage incentive, cost control, plant safety.

Let's examine the two-year course in industrial technology as offered by the Technical Institute of the University of Dayton. By way of general subjects you take Business English and Effective Speaking, Applied Psychology, Report Writing, Economics of Industry, American Political Ideas. You'll need all of these in your job, just as you'll need Conference Leadership—which trains you to take part in group discussions of shop committees and instructional get-togethers, and furnishes you practice in conducting these.

(Continued on page 84)

NEW, Terrific Combination!

GYRO Audio Tone

New Audiotone Modulator FOR ANY TRANSMITTER

Quickly plugs into your present transmitter to produce AUDIOTONE signal.

Will operate any nonselective audio tone receiver with reduced interference effects & improved reliability.

Completely Assembled & tested in small hand-held case with "clicker" Keying \$9.95 Switch, Plug & Bat'ries. NOT A KIT

New! Gyro Audiotone Receiver

Wired & Tested, incl. 3 standard hard tubes, 27 1/4 Mc.

Supersensitive, yet no critical adjustments with any antenna length! Less affected by interference, operates from Gyro Audiotone or other modulated transmitter (Babcock, etc.) Requires 45 V. btry. & any relay 5,000-10,000 ohms.

Lightweight, only 2 1/4" x 1 1/4" x 3 1/4". Ready 18.95 for installation

STORAGE BATTERIES
BB54-A, 2 Volt, 3"x4"x5 1/2"—27 Amp. Hours..... 2.75
NTE, Mini., 6 volt, 2 1/4"x1 1/4"x3 1/4"..... 2.45
CHARGER FOR DRY BATTERIES. Use 1 set of A & B's all season! Recharges all 1 1/2 to 90 Volta 6.50
VIBRATORS, 6 Volt \$1.35; 2 Volt Synchronous 1.00
METERS: Accurate 2 1/2" sq.
0-1 Ma..... \$3.85 0-3 Ma..... \$2.95
0-5 Ma..... 2.75 0-50 Ma..... 2.65
FLAWEIGHT HOOKUP WIRE—25 Ft. (5 colors) .25
6 VOLT DYNAMOTORS, with Shockmount base, 250 Volts/85 ma. or 180 Volt/100 ma. 7.95
SIGMA 4F RELAY COILS: Repair relays, 2,000, 3,000 or 10,000 ohms..... 1.10
SOCKETS: Mini, hearing aid, 4 or 5 pin..... .15
Mini 7 pin..... .10c; Loktal or octal..... .25c for 2
PLUG & SOCKET, small 3 or 4 pins..... pair .15
5 or 8 pin..... pair .25
BAKELITE BOARDS for Receivers, 25c; RF CHOKE SWITCHES: Toggle SPST..... 20c; Slide Switch KEYING SWITCH, remote new micro "click" type METER JACK, open circuit..... .30
Closed circuit..... .35c; PLUG for jacks..... .15
MINI PLUG & JACK, for metering, etc..... .25
RESISTORS, small—most sizes..... .10
POTENTIOMETER, mini 10,000 or 25,000..... .40
POT., time size, 10,000-25,000 ohms..... .85
CONDENSERS, most sizes..... .10
CERAMIC TRIMMERS, 3-30 mmf. or 7-45 mmf. .60
PADDER, For Simple Single or Mini Mac Sets
VARIABLE CONDENSER, air type, screwdriver shaft, 15, 25 or 50 mmf..... .40
RECEIVER PLATE COIL CTC, with adj. iron core Wound for Lorenz, S. Single, Johnson, Mini Mac .30

NEW TUBES. All Types Available—GUARANTEED—lowest prices. All gas tubes.
154..... \$.90 XFG-1 \$3.20 3D6..... \$.80
155..... \$.90 1A6..... 1.90 3A5..... 1.35
354..... 1.85 3A4..... .95 354..... 1.85
1U5..... .90 3Q4..... 1.35 3V4..... 1.05

GYRO ELECTRONICS CO.
325 Canal St. New York 13, N. Y.

Sensational, Beautiful
ALL PLASTIC
Span 14" Length 14 1/2"
CONTROL GAS MODEL
COMET
Sabre 44
READY TO FLY

- Complete with powerful 1/2 A-Herkimer—049B Gas Engine, control handle, control lines and flying instruction leaflet
- Modern swept-back wing jet fighter design
- Molded from durable plastic in 2 colors; transparent cockpit canopy; decal markings and insignia
- In BEAUTIFUL 3-COLOR BOX

\$9.95

ROOKIE TRAINER
Control Gas Model
KIT No.-T6
\$3.50
• FUN for the BEGINNER
• THRILLS for the EXPERT
• EASILY ASSEMBLED
• For "B" and "C" Engines

COMET MODEL HOBBYCRAFT, INC.
501 W. 35th St., Chicago 16, Ill.

"West of the Rockies"
Go Western!
LARGEST RANGE
Of Model, Hobby and Craft Supplies In the West.

WESTERN MODEL Distributors
LEADERS SINCE 1933
2 Convenient Locations
LOS ANGELES
2601 So. Broadway
OAKLAND
1106 5th Avenue

SPECIAL CHRISTMAS RATES

12 big issues of
Air Trails HOBBIES For Young Men
ONLY \$3

You can order a full year of this exciting new magazine for yourself as well as your friends . . . at this money-saving rate . . . if you act within the next 30 days.

On the newsstand Air Trails HOBBIES For Young Men sells for 35¢ a copy—12 issues would cost you \$4.20. But this Christmas offer brings you these same issues for only \$3.00. Think of it—a saving of \$1.20 on each subscription.

*The coming issues will be even
more fascinating than ever before*

They'll be jam-packed with news of model planes, boats, cars . . . plus shop projects complete with step-by-step instructions. Every issue is filled with over 150 photographs, drawings and diagrams—showing you every important detail of construction.

You'll read about new developments in the world of science and mechanics. You'll find descriptions of contests that enable you to win valuable cash prizes. Never before have we offered such a wealth of information at such a low price.

GET IT NOW!

There's no time to lose. Just fill out the form below, enclose check or money order, and speed it back to us. Remember, you can add as many gift subscriptions for your friends as you like . . . at the same low rate of \$3 each.

Fill out and mail this order form today

Air Trails HOBBIES For Young Men
304 East 45th St., New York 17, N. Y.

Yes, Send me the next 12 issues of Air Trails HOBBIES For Young Men for only \$3. I enclose payment.

NAME

ADDRESS

CITY ZONE.....STATE.....

I'm enclosing an additional \$3 for a gift subscription. Send 12 issues of Air Trails HOBBIES For Young Men to:

NAME

ADDRESS

CITY ZONE.....STATE.....

ATH-11-54

GUILLOW

OFFERS THE LARGEST VARIETY OF

War Plane Kits



25¢ each

24 models to choose from

Accurate scale models of jet fighters, transports and helicopters. Authentic details that duplicate their "big brothers" in every respect. They're so easy to assemble — the razor sharp die-cut parts go together like magic — no difficult carving required! Start building your collection of famous planes today... it's educational and lots of fun. Other shelf model kits available from 10c to 50c.



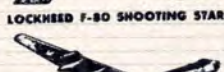
REPUBLIC P-47 THUNDERBOLT



VOUGHT F7U CUTLASS



NORTHROP F-89 SCORPION



CONVAIR B-36 BOMBER



FAIRCHILD C-119 PACKET



VOUGHT F4U-1 CORSAIR



BOEING B-29 SUPERFORTRESS



MCDONNELL F2H-1 BANSHEE



N. A. P-51 MUSTANG



CURTIS P-40 WARHAWK



N. A. F-86 SABRE



GRUMMAN F9F PANTHER



RUSSIAN MIG-15



NORTH AMERICAN T-28 TRAINER



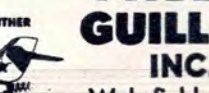
N. A. B-45 TORNADO



MARTIN B-57A CANBERRA



SIKORSKY H-3



LOCKHEED C-69 CONSTELLATION



DOUGLAS AD-1 SKYRAIDER



REPUBLIC P-84 THUNDERJET

PAUL K. GUILLOW INC.
Wakefield, Mass.

AMAZING NEW MODELING MATERIAL!

HOBBYCRAFT

fiberglass

LINE

Complete Experimental Kit	\$4.95
Fine Weave Cloth (1 yd.)	2.35
Medium Weave Cloth (1 yd.)	2.35
Coarse Weave Cloth (1 yd.)	2.50
P.V.A. Parting Film (2 yd.)	1.00
Liquid Mold Release (4 oz.)	.50
8 oz. Glass Resin	1.20
16 oz. Glass Resin	2.20
1/4 oz. Glass Hardener	.50

If not available at your dealers, order direct

MIDWEST PRODUCTS CO.

6005 East Dunes Highway

Gary, Ind.



SLO-MO-SHUN IV

178.497 MILES PER HOUR!
WORLD'S SPEED RECORD



Operating scale model, 16 inches long—6½ inches wide, of world's fastest speed boat—SLO-MO-SHUN IV. Model speeds to 30 miles per hour (with large ½ A gas engine). Kit, in four-color finish box with customer appeal, contains all balsa parts for assembly—including finished brass propeller, universal joint, brass tubing and shaft, decals, machined rudder and bracket, skid fins, and complete victory records of SLO-MO-SHUN IV.

Window Streamer and Catalog Sheet in each carton of 12

FAMOUS MODEL BOAT COMPANY

3775 University Way
Seattle 5, Washington

Sold less motor—
Retail \$3.95
Regular discounts

(Continued from page 82)

Like all engineers you get math, technical drawing and your share of the sciences—industrial chemistry, and in the realm of physics, mechanics, electricity, and heat, light and sound. And you'll need those, too. (Suppose as a plant safety technician you're faced with the problem of static electricity from a machine; knowing that you can overcome the trouble by putting a "collector" on the machine might come in handy.)

At the same time, all the way through the two-year course you study the actual "tools" of your trade—Industrial Materials and Methods of Manufacture, Motion and Time Study, Job Evaluation and Wage Determination and the like.

The industrial technician gets high pay. He starts out around \$80 per week. He is in an excellent spot to go up through the "production line"—from group leader to foreman to supervisor and on up to staff advisory jobs. Eventual pay and position depend on the individual. The cost of the training varies from school to school, as it does for all technician courses, depending on whether the school is publicly or privately operated and other factors. Tuition at the Technical Institute of the University of Dayton comes to around \$440 a year. Like most schools of this type, it has its own placement service to help technician grads find jobs.

Dayton is an example of a technical school that is conducted as part of a university. Most such are of fairly recent origin. (The U. of Dayton is a private institution founded in 1850; the tech school started in 1950.) Other universities and colleges that have set up a two-year technical institute in connection are Purdue, Penn State, Georgia Tech, Okla. A. & M., University of Omaha, Univer-

E and H MODEL HOBBIES

WORLD'S MOST FAMOUS MODEL CATALOG-HANDBOOK!
FROM THE WORLD'S LARGEST MAIL-ORDER HOUSE

OFF THE PRESS

OCTOBER 1st

1955 EDITION

140 PAGES

25,000 ITEMS

AIRPLANES — BOATS — CRAFTS — VEHICLES — GAMES — PHOTOGRAPHIC

ACCESSORIES — HARDWARE — TOOLS — ELECTRICAL — CHARTS — DATA

COMPLETE SECTION ON MODEL RAILROADING

50c REFUNDED WITH
FIRST ORDER OF \$5.00.
ONE TO A CUSTOMER.

ONLY **50c** NO STAMPS

FREE WITH INITIAL
ORDER OF \$5.00 OR MORE.
ONE TO A CUSTOMER.

PLEASE PRINT NAME AND ADDRESS

"I have just received a copy of your new 1955 catalog. If I recall correctly, I wrote you a very enthusiastic letter about your 1954 catalog when that was issued.

"Now you have done a still better job—made it much more complete—and I just used all of the complimentary things that I would enjoy saying, in last year's letter. But more seriously, I want to congratulate you again on the excellent and complete coverage you have given the model railroad hobby. I firmly believe that catalogs such as yours can do more to stimulate interest in model rail-

roading than almost any other form of publicity. It must be a satisfaction to your customers to receive a catalog in which they can find every last item that they could possibly need to build or improve their layout; and further, I am sure that they find a great many things they never realized were on the market. You can take great pride in a job well done, and I am sure every manufacturer will appreciate your efforts in furthering the hobby.

"Again, congratulations on a fine piece of work in your latest catalog. You always do a wonderful job, but this is GREAT. We wish that we had many more

dealers like you, but know that YOU will not agree with us on that. Best wishes."

JOHN TYLER
MANTUA METAL PRODUCTS CO., INC.

"One of the most comprehensive model railroad catalogs I have ever seen . . . Almost everything one could wish for in model railroading is listed in this handy volume . . . Practically an Aladdin's lamp for the fan."

AL KALMBACH
KALMBACH PUBLISHING CO.

Send to E and H Model Hobbies, Room 50, 130 W. Chelton Ave., Philadelphia 44, Penna.

sity of Houston, and Lawrence Tech. (Rochester Institute of Technology, referred to in the last issue, reversed the procedure; while its two and three-year technician courses have been well known for years, it was authorized to grant a B.S. college degree only in 1953.)

These institutes at the universities and almost every other type of two-year school for technician training, whether a private or a public or an industry school, offer the service of evening classes. This is chiefly for the benefit of those who must work full-time. Thus, even if you're already employed, you can upgrade yourself in your job, prepare yourself to enter a new field, or even slowly pile up time toward a bachelor's degree.

Building Construction Technician

More and more two-year tech schools are adding building construction to their curricula. All you have to do is look around you to learn why: nowadays the building industry is doing 30 billion dollars annually. In obtaining school training, you get a worthwhile start whose equal might take you a number of years to achieve without schooling. You learn to make and read blueprints, you get a knowledge of all types of construction—masonry, carpentry, steel. The math and physics you take will furnish you with the essential picture of "how much what will do and stand."

The training in building construction courses can fit you for a variety of jobs: an estimator who computes the cost of labor, materials and the like, and prepares bids; a junior architect who designs and supervises construction; a building foreman, as well as superintendent; a salesman of building supplies

(Continued on page 87)

LATEST "CUSTOM MIDGET" RADIO

CUSTOM
RECEIVER



RELAY
INCLUDED

CUSTOM
TRANSMITTER
BOX INCLUDED



ALL THREE
\$9.98

CUSTOM
ACTUATOR

RECEIVER TUBE "IDLES" WHILE RELAY REMAINS
IN UNENERGIZED STATE. (saving tube and battery)

TUBE CURRENT INCREASES and RELAY BECOMES
ENERGIZED ONLY WHEN TRANSMITTER IS KEYS

SHOULD RECEIVER or TRANSMITTER FAIL WHILE
IN USE MODEL COMES IN RATHER THAN FLYING
OUT OF SIGHT (This new type of "Fail Safe" operation fully
explained in our instructions)

Full Re-Designed "CUSTOM RECEIVER" weight under 3 ounces including 10,000 ohm relay (relay included) plus Silver Ceramic Trimmer, midge resistor & condensers, Nylon Coat Coil wire etc. in kit. Uses one X F G 1 tube which IDLES while relay not energized saving tubes life, batteries etc. "CUSTOM TRANSMITTER" 27 M C Exam Free Band kit with pre drilled base etc. Transmitter Box only 4 1/2" x 3 1/2" (Box included) may be hand held or placed on Field. Properly constructed has 1 mile or more range. Full drawings and instructions included. Parts for "CUSTOM ACTUATOR" furnished. Magnetic Principal, uses battery supply alone, no rubber power used. Operates both rudder and elevators or rudder alone for Aircraft Boats or Cars, weight under 1/4 ounce. Less tubes, batteries, keying lead, antenna, receiver var. resistor, crystal.

"CUSTOM MIDGET" RECEIVER
TRANSMITTER and ACTUATOR . . . \$9.98 ☐

Also Available "STANDARD MIDGET 1" Radio kit, this group of 3 units, same design as above, same Relay, Same type Transmitter and Actuator. The difference from above is the Receiver weight which is greater (slightly over 4 ounces) Heavier components used.

"STANDARD MIDGET 1" RECEIVER
TRANSMITTER and ACTUATOR . . . \$6.98 ☐

PLANS FOR THE "CUSTOM MIDGET" all three units . . . 50c ☐

BOOKS
"RADIO CONTROL OF MODEL AIRCRAFT" \$3.98 ☐
"RADIO CONTROL OF MODELS" . . . 2.50 ☐
"RADIO CONTROL SHIPS, BOATS, AIRCRAFT" . . . 3.98 ☐

MODELLERS ORDER DIRECT

"SPECIAL 10 FOOT TRANSMITTER AERIAL" . . . \$1.00 ☐
X F G 1 tube . . . \$3.50 ☐
3-A-4 tube . . . 1.00 ☐
3-A-5 tube . . . 1.35 ☐
Keying Switch 50 ☐
Micro Switch 98 ☐
Photo Elec. Cell 50 ☐
Variable Resistor 50 ☐
0 to 3 Milliammeter . . . \$3.50 ☐
0 to 50 Milliammeter . . . 2.75 ☐
Both Meters above . . . 5.25 ☐
Peterson 27.255 M C Z-9 Crystal . . . 4.85 ☐
Rosin Core Solder, Kesters 3 ounce box 50 ☐

25c ☐ NEW and FULLY REVISED Radio catalogue. Shows parts as low as 1/2 to 1/4 the price you normally pay. Also gives more details, more photos etc. of our kits. . . . 25c ☐

MODELLERS—Check off each item you wish to order above. PRINT YOUR NAME AND ADDRESS on a separate sheet of paper with above order. Send REMITTANCE IN FULL.

RADIOMODELS, BOX 36, DEPT. A BALTIMORE 6, MARYLAND

DEALERS WRITE FOR PRICES

SPECIAL 10,000 OHM SIGMA RELAY . . . \$2.98 ☐
Soldering Iron \$2.98 ☐
Battery Tester, reads 0 to 2 Volts and 0 to 50 volts 2.98 ☐
Electric Motor 6 volt for Boats 2 to 4 Ft. \$8.50 value 3.88 ☐
Black Crackle Finish Transmitter Cases 4" x 5" x 3" . . . \$2.98 ☐
6" x 5" x 4" . . . 3.25 ☐
6" x 5" x 6" . . . 3.50 ☐
10" x 8" x 7" . . . 3.98 ☐
Neon Bulbs 15 for 1.00 ☐

Tech Ed's View of the New Air Progress

"From the technical standpoint air-minded readers of Air Progress will get much satisfaction out of the new 1954/55 edition. We are especially proud of the feature, 'The Incredible Aircraft of the German Luftwaffe!' It is chockful of rare photos and three-views, many unheard of until now, such as the first rocket-powered airplane, the He 176, the supersonic DFS 346, the Me 264 bomber developed in 1942 (as large as our B-29) and a host of others. 'The Era of the Guided Missile' tells where we would stand in any weapons-of-future warfare, profusely illustrated with U.S. and foreign 'birds.' 'Weird Wings Aloft' is a primer in wing shapes and what they mean. How the weary and drab bombers and transports of World War II have been glamorized into executive transports: 'From Dog Tags to Glad Rags.'

"Interested in building your own plane? The CAA has relaxed its rules, and you too can construct your own putt-putt now. A complete set of Federal regulations for home building appears on page 80. Also, many home-builts in pix.

"Cutaways of F-86F Sabre, P2V-5 Neptune, Sikorsky S-55 will gladden the heart of the technical minded. This is only a glimpse; order your copy now and find out."

—Alex Dawydoff

50¢ U.S.A.—60¢ Canada

STREET & SMITH PUBLICATIONS, INC.
304 E. 43th St., New York 17, N. Y., U. S. A.
Please send me.....copies of the
1954/1955 edition of Air Progress for
which I enclose.....

Name (print).....

Address.....

City.....Zone.....

State.....Country.....

(ATH-1154)

"My Favorite Model"



"MILLS-CATALINA" says John Schneider

■ Although he has been building model airplanes for quite some time, model photographer John Schneider of East Meadow, Long Island, surprised us by declaring that of all the various models he has built the boat pictured here is his favorite. Perhaps the fact that John and his family live near Salisbury Park with its new model boat basin in Nassau County has something to do with his decision. In a few short minutes he's able to have his boat in the water and underway.

The craft, according to Mr. Schneider, "is a Sterling Models' replica of the Chris-Craft Catalina. A Mills 1.3 cc diesel which powers the boat is equipped with throttle control.

"The radio components consist of a Control Master receiver, a Bonner Compound escapement to operate the rudder and a Super Aerotrol escapement for the throttle.

"This boat has had over 200 runs to date, each ranging from 10 to 15 minutes duration. The engine is still in perfect condition. The Mills runs equally well in either direction so it was not necessary to use a pusher prop."

Originally planning for operation with an inboard powerplant, John decided that an air-prop set-up would give him snappier performance with less time spent on preparations, more on running. Although the Chris-Craft concern might view this arrangement with a jaundiced eye, it gives modeler Schneider a boat that runs—everytime.

WIN \$25.00 WITH YOUR FAVORITE MODEL

Send photo(s) of yourself & model plus details to "My Favorite Model" contest c/o Air Trails HOBBIES For Young Men.

ENGINEERING DEGREE

Graduates in Demand

27
MONTHS

• Speed-up training in Engineering — Aeronautical, Chemical, Civil, Electrical, Mechanical and Radio (inc. TV and Electronics). B.S. degree in 27 months. Frequent trips to outstanding industrial plants. Modern lab facilities.

Earn part or all of your expenses in this large industrial center. Low tuition.

If you are called into service, while still a student, you will be prepared for a specialized military job, AND can return to school without losing credits. Approved for veterans. Enter December, March, June or September. Send for free catalog.

INDIANA TECHNICAL COLLEGE

3114 E. Washington Blvd., Fort Wayne 2, Ind.



We have just gotten a limited shipment of formerly restricted Air Force aircraft recognition slides used to train U. S. airmen. Fighters, bombers, observation ships and other craft are shown from every angle... at a distance as well as close in. Many views of enemy planes were taken by the gun-camera of our own fighters in aerial dogfights during World War II. You can learn how to recognize various planes by studying these slides and help in Civil Defense or future service in the Armed Forces. Boxes of Jap, German, British and American planes. On all orders of 100 slides or more we will send you... FREE of charge a handsome pocket-size Mini-Viewer of mahogany plastic, with magnifying lens, light diffusion glass and quick change slide arrangement.

Introductory offer of 25 slides only 60 slides for \$1.95
With 100 slides at only 200 slides with Viewer, \$3.95
\$2.95 you get pocket size 300 slides with Viewer, \$4.95
Mini-Viewer FREE! 500 slides with Viewer, \$5.95
SEND order and money DIRECT to:
C & H SURPLUS SPECIALTIES CO., 428 W. Jackson Ave., Milwaukee 3, Wis.

K&O **FINEST IN MODEL BOATS**
KITS • MOTORS
DRIVE UNITS
ACCESSORIES
Everything Complete

K&O Speedster Kits 4.95 to 11.95—The Fleet Line Ready-Built Boats 4.95 to 10.95—Electric Inboard Motors 1.25 to 4.95—Electric Outboard Motors 2.95 to 4.95—Electric Drive Units 1.95 to 4.95—Gas Engine Screw Sets 3.95 to 7.95—complete line nickel-plated Model Boat Fittings.

AT YOUR HOBBY SHOP, TOY OR DEPT. STORE

K&O Models, INC.

14721 LULL ST., VAN NUYS, CALIF.

TROPHIES

For model meets, auto races, ALL sports!



Russell Trophies are specifically styled for stock car, hot rod, motorcycle or auto races... for model airplane meets... for all sports. Write for free racing or modeler catalog or send 35c for 60-page all-sports catalog.

RUSSELL BROTHERS

Dept. AT-11

312 K.P. Building
Des Moines, Iowa

Air Trails HOBBIES For Young Men



WHAT'S YOUR PROP I.Q.?

Answer yes or no to these questions.

1. Is the complete blade of a propeller called the air foil?
2. Does the Clark-Y air foil section deliver the highest thrust to power ratio?
3. The extreme tip is called the propeller hub?
4. Does speed flying require a specially designed propeller?
5. Will a more directional propeller take a greater load without slipping?

HEAT
PROOF

FUEL
PROOF

The latest in design and aerodynamic principles are being applied in the manufacture of TORNADO PROPELLERS.

Whether you fly Speed, R.C., Free Flight, or Control Line — there is a Tornado Propeller made to meet your individual requirements.

Consult the prop chart at your dealer . . . then mount a Tornado Propeller on your engine and get maximum efficiency out of both engine and fuel.

ANSWER: If your answer is "NO" to No. 3 and "YES" to the rest, you are an ACE.



Propellers

GRISH BROTHERS • ST. JOHN 1, INDIANA

(Continued from page 85)

and equipment; various kinds of inspectors and draftsmen; or a contractor's general assistant. The jobs, in other words, may be either in the office or "outside," and can lead to bigger and better things.

Heating, Air Conditioning and Refrigeration

In this field there is a rapidly growing need for the technician. Industrial refrigeration, frozen foods, home conditioning, precision manufacturing—all these require his services. In industry he may do drafting and layout work, cost analysis, sales, or engage in supervising and correcting technical problems in the field. He may assist the engineer in research and development. He may find work in allied fields such as sheet metal plants, chemical manufacture, factory sales representative, or public relations. Home conditioning—meaning both heating and cooling—has opened new vistas for him, as have other advances.

Specific job possibilities include systems designer, heating estimator, refrigeration installer, dealer (selling and servicing equipment, whether air conditioning, heating or refrigeration).

Courses in this rapidly expanding "triple-threat" field may often be found at a state-sponsored technical school or the type of "community" college in which part of the cost is paid by public taxes. Tuition at the five state-operated Agricultural and Technical Institutes scattered throughout New York State, for example, is free to residents; tuition at its five "community" tech schools of Applied Arts and Sciences ranges between \$200 and \$300. You may be missing a bargain in two-year post-High education by not investigating such institutions, along with

(Continued on page 89)

TROST IS TOPS IN HOBBY LINES



In addition to leading lines of Model Planes and Trains, TROST stocks many imported Toys, Leather Handicraft, Woodworking, Bead and Shell Craft, Woodburning, Textiles, Model Race Cars, and many other kinds of hobbycraft. Dealers write for complete A-Z list.

TROST

Modelcraft and Hobbies

3140 W. 63rd St. Chicago 29
PLANES-TRAINS-SHIPS-PARTS-SUPPLIES

WORLD'S FINEST!

✓ **Banner**
RADIO CONTROL
DEVICES . . .



STANDARD ESCAPEMENT.
Self-neutralizing, precision-built. Weight 1/2 ounce. Low battery drain. Guaranteed.



COMPOUND ESCAPEMENT
Four-position, self-neutralizing control unit gives multiple controls on single channel.



MOTOR CONTROL UNIT
Air-bleed device for 2-speed and cut-off. (Valve bracket only \$2.95)

See Your Dealer or Write

BONNER
Specialties

2900 Tilden Ave.
Los Angeles 64, Calif.

KAPPAK

MODEL NEW Wheels



4 STYLES-
32 NUMBERS
TO CHOOSE FROM

with
all these
Features

29c
to \$1.39
per pair

NO
HUBS
NEEDED

FITS ANY
SIZE
LANDING
GEAR

PAT. PENDING

NO
COLLARS
NEEDED



At All . . . good Hobby shops

United

HOBBY DISTRIBUTORS, Inc.

3311 West Diversey Chicago 47, Illinois
PLANES • CRAFTS • TRAINS • BOATS • MOTORS

EMBLEMS & DECALS

EMBLEM CATALOG FREE—write to: J. F. Novak Co., 2701 Meyer Avenue, Cleveland 9, Ohio.

DECALS—CUSTOM MADE FOR CLUBS, small or large quantities. Details free. Dek-A-Lac Mfg. Co., P.O. Box 232, Keyport, N. J.

PHOTOGRAPHS

PHOTOS OF AIRCRAFT from Wright bi-plane to latest jet. 250,000 photos in stock. Also old aviation books. Send dollar bill for six real photographs of the latest jets, plus the 52 page illustrated catalogue. Aeroplane Photo Supply, Box 195, Toronto, Canada.

AIRCRAFT PHOTOS—5 for 25¢. New larger photos. Sample and list 15¢. Try them today. Harry McIntyre, Box 423, Ocean City, N. J.

AIRCRAFT PHOTOGRAPHS—World War I to latest jets. List and sample photo 25¢. Air-photos, Box 117, Jamestown, N. Y.

INSTRUCTION

AVIATION ENTHUSIASTS! Great opportunity in aviation selling. Prepare now. Complete course \$5.00. 24 manuals, illustrating modern aviation sales techniques. Developed for enterprising young men seeking careers in aviation. Also a stimulating refresher for experienced salesmen. Send today. Aviation Institute, 377 Don Lane, Cincinnati 38, Ohio.

MODEL DRAFTSMAN

WILL DRAW AIRPLANE PLANS—flying or scale. Free estimates. R. L. Stearns, 514 Holden St., Raleigh, North Carolina.

MODEL & HOBBY BOOKS

BOOKS FOR GUN COLLECTORS—amateur gunsmiths, reloaders. Large selection. Send stamp for list TH. John Baenteli, 53 Borton Avenue, Akron 2, Ohio.

DESIGN YOUR OWN MODEL AIRPLANE with the aid of "Modelers' Design Data." Book \$1.00. E. M. Asphurd, Box 3128, Ft. Worth, Texas.

Classified Advertising

Everyone reads the classified. Here is a section hand-tailored for anyone with something to buy or sell.

RATES: Minimum 14 words for only 20¢ per word. Send remittance with ad to:

Air Trails HOBBIES For Young Men
575 Madison Avenue
New York 22, New York

MING TREE KIT

MING TREE KIT—wonderful gift or decorative addition to your home. \$3.50 complete. Tim, 409 Bon Aire, Dallas, Texas.

SECOND-HAND MOTORS

USED MOTORS. Interesting display items, not guaranteed. \$1.00 each or 12 for \$10.00. All American Model Motor Exchange, Box 885, Santa Monica, California.

WANTED

WANTED—back issue, Air Trails, Model Airplane News, Flying Aces, Cleveland Model Plans. Airphotos, Box 117, Jamestown, N. Y.

SPECIAL OFFERS

MORE FOR YOUR TRADE-IN! We will positively allow you more for your used motor if in good condition. Get our offer before dealing anywhere. For information send 25¢ (refunded on first order) to All American Model Motor Exchange, Dept. A.C., Box 885, Santa Monica, California.

MONEY BACK GUARANTEE—retracto ball pens. New miracle ink. Instant drying. No leaking, smearing, transferring. Worth \$1.69 each. You pay 3 for \$1.00. Refills (will fit

Paper-Mate Pens, too) 3 for 50¢. Howard Company, 141-45 71st Avenue, Flushing 67, N. Y.

McCoy .049 diesel plus your choice of a 1954 Fox 35 or 29 for \$14.95 postpaid. Buffalo Model Specialty, Station B, Box 4, Buffalo, New York.

SPECIAL OFFER FOR LIMITED TIME ONLY! Trade your old motor on a brand-new radio-control! For information send 25¢ (refunded on first order) to All American Model Motor Exchange, Dept. A.C., Box 885, Santa Monica, California.

RADIO CONTROL

POPULAR RECEIVER BASES DRILLED, 50¢; blanks, 25¢; drilled relay mounts for all relays, 25¢. Specify. R. C. Stone, 7403 Conner, Albuquerque, New Mexico.

PLANS

550 AIRCRAFT PLANS—1914 to 1948. Also hundreds of aviation books, historical, recognition, technical such as aircraft of the 1914-18 war, Jane's all worlds aircraft. Send 25¢ coin for 3 sample plans and lists. Breaud, 180 Stephenson's Road South, Oshawa, Ont., Canada.

RECEIVERS—3 CHANNEL (REED) 50¢. 5 channel (reed) \$1.00. 3 tube tone 25¢. 5 tube superhet 75¢. 1 tube tone 50¢. TRANSMITTERS—3 channel (tone) 75¢. 5 channel (tone) \$1.50. 2.5 watt (tone) 50¢. Electronic Model Engineering, 6127 Alta Ave., Baltimore 6, Maryland.

WARSHIP PLANS—Detailed scale general arrangements. All major types. Midway, 85¢; Wisconsin, 70¢; Des Moines, 60¢; destroyer and list, 25¢. Edward Wiswesser, 2537 Cumberland Ave., Reading, Pa.

MODEL SUPPLIES & EQUIPMENT

BALSA WOOD! Select, prime grade! Unexcelled for model aircraft, etc. All sizes. Ready shipment. Satisfaction guaranteed. Special offer: free price list. Remaco Balsa, 7 Springfield Street, Chicopee, Mass.

MODELERS! Free folder about snowshoes and new kit. Pride Models, 16-D Cedar Street, Binghamton, New York.

New by Monarch



bambino

395 FOR ENGINES — .099 to .15
WINGSPAN — 24 inches

Another MONARCH masterpiece! Perfection of design and outstanding PRE-FABRICATION make BAMBINO a "must" for all. A truly magnificent model — refreshingly different in every trim and beautiful line. A DE LUXE kit with formed metal MONO-STRUT, SPINNER, bubble canopy, rubber wheels, huge assembly illustrations, etc.



GOOD NEWS

595

A stunning new model — perfect for all sport flying and team racing. Handsome, sleek, and trim in every racy line — from any angle. Nothing finer exists — for here is design and PRE-FABRICATION at its greatest. Contents are lavish — formed aluminum struts, bubble canopy, rubber wheels, and much more.

at your dealer
by mail add 30¢

FOR ENGINES — .19 to .35
WINGSPAN — 30½ inches

MONARCH MODEL AIRCRAFT CO. Inc.
Brooklyn 33, N. Y.

CONSTRUCTO SPINNING WHEEL



AUTHENTIC COLONIAL MINIATURE

Utterly charming, scrupulously-detailed reproduction! A bit of historic AMERICAN! - 13" high, 10" wide. Beautifully grained, hardwood parts, ready-finished (carved, grooved, rounded, etc.) Assembles neatly, quickly with minimum sending. You'll be proud, indeed, of this graceful "conversation-piece!"

\$2.95

HISPANIOLA PRE KIT

MAKES 9/4" x 10" BOAT

\$1.50 These perfect scale models of the real ships become family heirlooms. Expertly detailed, fully pre-fabbed, hardwood parts! Each complete kit includes clothsails, some with oil paints, display stands. Other models: TUG BOAT, CAT BOAT, MEDITERRANEAN GALLEY, FELLUCA, XEBEC, SAMPAN. (Dealers, jobbers - reg. trade prices)

New, Illustrated Hobby Catalogs
SHIP MODELS - FITTINGS, 50¢; TOY TRAINS 50¢;
H. O. TRAINS 50¢; COLLECTORS SOLDIERS 25¢.

POLKS MODEL HOBBIES
314 FIFTH AVENUE, DEPT. YM-114, N. Y. 1, N. Y.

IT'S NEW!
IT'S FREE

Our Illustrated 1955

RC

Catalog

Ready October 15, 1954

If you aren't on our mailing list, send postal to

Ace Radio Control

Box 301
Higginsville, Mo.

Hobby Club Emblems

LAKE ERIE GAS MODEL CLUB
CLEVELAND, OHIO



Academy of Model Aeronautics chartered club with 28 members of which 15 are AMA licensed. Holds two invitation meets each year, A/2 Free Flight and A/2 Free Flight Scale. Members active in outside events as timers, judges and contestants. Club's sponsor is Frank Andrisek, proprietor of Nobby Hobby Shop in Cleveland. Director of Publicity and Activities: J. W. Grega, 355 Grand Blvd., Bedford, O.

Send your club insignia—with info on your group. ATH will pay \$10 for each emblem and report used here. Type data and send only printed emblems—no sketches.

The Standard
Of Quality

Cavacraft★

AUTHENTIC SOLID SCALE MODELS

PHILADELPHIA, PA

SIG BALSA WOOD

GRADE AAA—PRECISION CUT

CAREFULLY GRADED

PROCESSED SPECIFICALLY FOR
MODEL AIRCRAFT BUILDERS

Over 300 stock sizes

Write for FREE SAMPLE and price
list of wood and model supplies

DEALERS: WRITE FOR DISCOUNTS

SIG MANUFACTURING CO.
MONTEZUMA, IOWA

DARWIN SHAKE-PROOF TANKS



PW Series \$.50 ea.
B Series .75 ea.
S Series 1.00 ea.
L Series 1.00 ea.
M Series 1.00 ea.
A Series 1.00 ea.
Special No. 0, 1-oz. for
Team Racing \$1.00 ea.
28 different sizes from
sizes from .014 oz. to
5.1 oz., 1/2 A to Class D.
Constructed completely
of fuel-proof brass.

Tanks may be cemented into your plane, will not leak or
the tubing shake loose.

See the complete line on display at all dealers.

DARWIN MODEL AIRCRAFT COMPANY
2430 Tremmel Avenue Ann Arbor, Michigan

AIRCRAFT OF THE 1914-18 WAR

The most complete work of its kind
ever produced. 80 major aircraft are af-
forded a detailed 1/72 scale 3-view draw-
ing, some folding out to 11" x 22" plus a
large photograph and complete data and
specifications. In addition 132 further
photos and data of various experimental,
service types and squadron line-ups are
included. This book is 11" x 8 1/2" weighs
nearly 2 lbs., cloth bound and gilt blocked.
In all a total of 234 pages and 232 photo-
graphs. Send 10¢ coin for a fully descrip-
tive 6 page folder containing the names
and layout of all aircraft included in this
beautiful new publication.

BREAU

180 Stephenson's Rd., S. Oshawa, Ont., Can.

(Continued from page 87)

junior colleges, right in your vicinity.
Most of them offer a variety of courses.

Among other courses in general for en-
gineering technicians are those in civil
engineering, electrical power, and auto-
motive, diesel and steam technology. A
field with mounting opportunity is instru-
mentation, due to the increasing use of all
kinds of instruments in industry and re-
search. The instrumentation student learns
to design, install or service and repair
such gadgets as oscilloscopes, altimeters
and electronic computers. The trend to-
ward "automation" in many industries,
like the automobile, has much heightened
the demand for instrument technicians.

Chemical Technician

You definitely need not be worried
about getting a job during the next five
or ten years if you take training in
chemical technology. The constant ad-
vances in new products and processes in
chemistry are creating whole new indus-
tries and millions are being spent an-
nually for research to widen the horizon
yet further. The consequent need for
chemical engineers in turn means vast
opportunity for those who are qualified
to assist them. To qualify you'll need
training. A chemical salesman, for in-
stance, which is one of the job possibili-
ties, today has to know far more than
mere selling techniques. Schooling pre-
pares you to become a lab assistant or
lab technician, and you may step up to
lab supervisor or production supervisor.
Another opportunity is as pilot-plant op-
erator, which has to do with research and
development.

Most technician schools with a mul-
tiple-training program offer the chemis-
try course. Unique is the one taught at

(Continued on page 91)

ORDER SUPPLIES NOW!

SEND FOR NEW
FREE CATALOGS!



Write us on your company
letterhead for our regular
catalog; also for special
catalog on toys.

**MODEL
AIRPLANES
RAILROADS • CRAFTS • TOYS**

Now 2 Shipping Points
to serve you!

Dealers Hobby Supply, Ottumwa, Iowa, and
Dealers Hobby Supply, Des Moines, Iowa,
both ready to serve you. Complete stocks,
fast service.

We sell to dealers only.
100% WHOLESALE

**DEALERS
HOBBY SUPPLY**

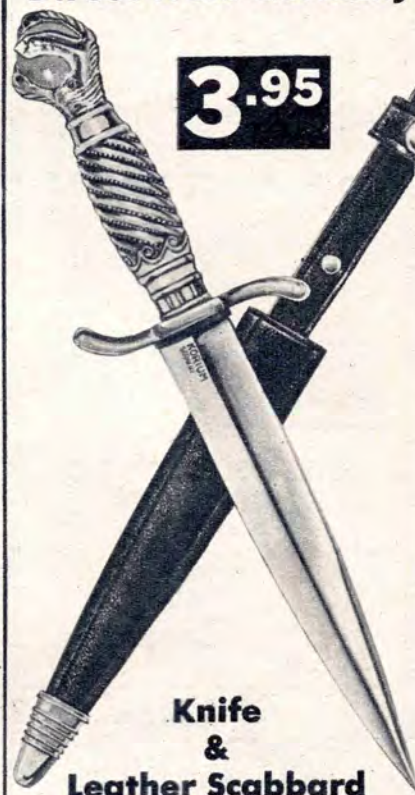
P.O. Box 594-A11
Ottumwa, Iowa

P.O. Box 506-A11
Des Moines, Iowa

Solingen Steel HUNTING KNIFE

Direct from Germany

3.95

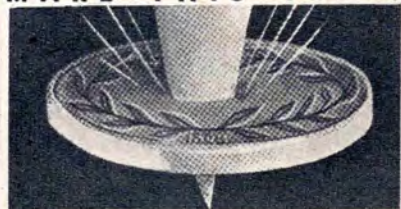


Knife
&

Leather Scabbard

The famed **BLACK FOREST HUNTING KNIFE**
—made in Solingen, Western Germany of
superfine *Nicht Rostend* (non-rusting) steel is
NOW available here! The rugged beauty of
this superb knife has already won recognition
for design on the Continent—and its utility and
value as an aid in hunting & fishing has made
it a favorite with sportsmen all over Europe.
Will stand up under the most rugged treat-
ment; genuine leather scabbard is metal-
tipped; the blade is actually sharp enough to
shave with! Length, 10 inches. Sleek, graceful
lines of this new German import provide an
ideal rec room or men's den decoration. It's a
dandy gift item and a superb collector's piece!
The tough, sturdy **Solingen Steel** assures you
years of dependable service.

MAKE THIS TEST!



Place a thick metal disc or medallion on the
ground. Plunge the point of the **BLACK FOREST
KNIFE** downward. The knife will completely pierce
the metal piece without ANY damage to the blade!
Import supply is limited and the low 3.95 price
(postpaid) for BOTH knife and scabbard means
you'll have to act fast! Send 3.95 for prompt, free
delivery. CODs plus postage. Your 3.95 back quick-
ly if you're not delighted. Send to:

THORESEN'S, Dept. 213-K-80

352 Fourth Avenue, New York 10, N. Y.
(Residents of Canada: Avoid duties & "extras!"
Order direct from THORESEN CO.,
Dept. 213-K-80, 45 St. James St. W., Montreal 1, P.Q.)

THORESEN'S, Dept. 213-K-80
352 Fourth Ave., New York 10, N. Y.

Please **RUSH** me a Black Forest Hunting Knife and
leather scabbard on 5-Day Money-back home trial. If
not delighted with this remarkable hunting-&-fishing
aid, I will return it within 5 days for **FULL REFUND**.

☐ 3.95 enclosed. Send prepaid.
☐ Send C. O. D. plus postage.

NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

(Canadian orders shipped direct from Canada, duty
paid. No extra! Write: Thoresen Co., Dept. 213-K-80,
45 St. James St. West, Montreal 1, P.Q.)

for any MODEL AIRPLANE



flying or solid scale; glider, rubber, gas or jet; free flight, radio or control line.

THESE X-ACTO TOOLS



Files—\$3.95



"D" Drill Chuck Adapter—\$1.25



Screw Driver Adapter—\$1.50

Designed by model craftsmen and precision-made for fine work

WILL HELP YOU DO A BETTER JOB

and get more fun and satisfaction from your hobby.



NO. 86 HOBBY CHEST—\$12.00

NO. 87 KNIFE & TOOL CHEST—\$18.00

Send for 32 page booklet "Building Your First Flying Models"—25¢. Full size plans and instructions for 4 models plus articles and helpful hints.

dept. D11

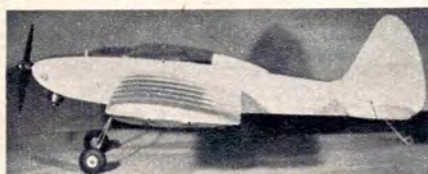


x-acto, Inc.

48-41 Van Dam Street
Long Island City 1, N. Y.

Summer's past and Winter's here—
Build a Dil-Bod for next year.
In the meantime, pass the time away
By flying a Snapper every day.

SOUTHWESTERN Makes Satisfaction a **CERTAINTY**
½ A SNAPPER



FUEL TEES AND YOKES FOR R/C FLYING
SOUTHWESTERN MODEL MFRS.
P.O. Box 9571 West Tulsa 7, Okla.

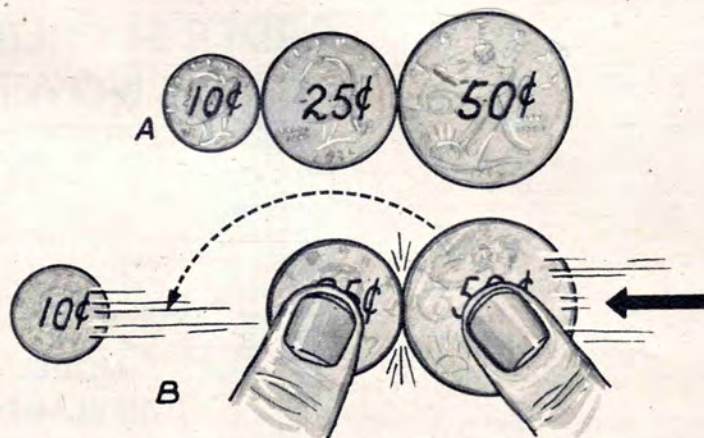
Trick Stuff:



PROBLEM: To add five paper matches to the six shown in row "A" in order to make *nine*.

SOLUTION: Add the five matches to the six, as shown in row "B," so that the eleven matches spell out N-I-N-E.

—Richard Van De Polder, Kalamazoo, Mich.



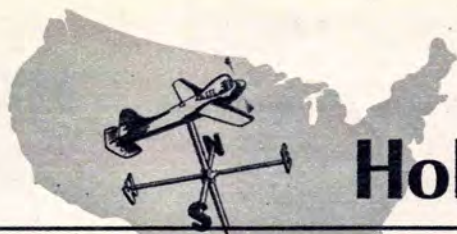
PROBLEM: To move the fifty-cent piece between the dime and the quarter in two moves. You can only touch two coins but the first coin you touch you cannot move, and the coin that moves you cannot touch. This can be done with checkers or coins of any denomination you prefer.

SOLUTION: Hold the quarter with your forefinger (the first coin you touch you cannot move), then place your other forefinger on the fifty-cent piece and slide it sharply against the quarter. The dime will slide across the table although the quarter does not move (the dime is the coin that moves although you did not touch it). Now slide the half dollar around the quarter and in between it and the dime.

—Mrs. W. N. McVey, King City, Mo.

What's Your Favorite Trick? Cash Prizes!

We're asking readers to send in their favorite original magic tricks. Air Trails HOBBIES will pay \$25.00 for first one received and illustrated here. All you have to do is furnish us with a description of your favorite feat, include rough diagram or sketches if required. Send to "Trick Stuff" Dept., c/o Air Trails HOBBIES For Young Men, 304 East 45th St., New York 17, N. Y.



Hobby Shop Directory

Model Builders! Here's a listing of the nation's leading hobby shops. You'll want to file it away—and when you're in the neighborhood, drop in and browse around. They're expecting you.

CALIFORNIA—CULVER CITY

New Location, Larger stock, Offstreet Parking, Same friendly service since 1935.

Open Weekdays 10-6
Mon. & Fri. Even. 7-9

PICO MODEL & HOBBY SHOP
5407 Sepulveda Blvd. EX 8-9913

CANADA—ONTARIO—HAMILTON

Complete model supplies
Boat Kits Plane Kits
Motors
We specialize in service

GORDINEER'S
STANDARD CYCLE SERVICE
230 Locke St. S. JA 2-7367

MASSACHUSETTS—CAMBRIDGE

Model planes, motors, railroads, ships and accessories.
9 to 6 daily and Thurs., Sat. evenings.

CROSBY'S HOBBY CENTRE
1704A Mass. Ave. KI7-4389

NEW JERSEY—PARSIPPANY

The Town of All Hobbies—
30 mins. from N. Y.
Open 7 days—All day Sat., Sun.
Flying fields available
Buy 'em—where you Fly 'em.
RICH'S HOBBYTOWNE, INC.
Route 46 Boonton 8-2666

NEW YORK—BROOKLYN

HEADQUARTERS!
Everything for model airplane builders.
Accessories our specialty.
Engines, parts and service.
Complete U-Ready Service.
Everything Advertised in Air Trails
HOBBIES For Young Men
PARK HOBBY CENTER
8120 Seventh Ave. Shore Rd. 5-2972

NEW YORK—BRONX—WEST-CHESTER

Specializing in R/C for Hobbies
AUTHORIZED DEALER FOR
ESSCO R/C PRODUCTS
IN THIS VICINITY
W. H. ELECTRONICS—MODELS
673 Elton Ave. LU 5-6705
Cor. 153rd St. & 3rd Ave.

NEW YORK—JAMAICA (3)

HOBBIES—THAT'S ALL!
HOURS: 10 a.m. to 8 p.m. daily
Mon. & Fri. 10 to 10 p.m.
Saturday 9 a.m. to 8 p.m.
JAMCO (Jamaica Co.) Hobbies, Inc.
179-29 Hillside Ave. JA 3-9140

NEW YORK—FLUSHING—JAMAICA

The most extensive stock of planes, engines and R/C equipment on Long Island.
Your problems are always welcome.
SKIP'S ISLAND HOBBY SHOP
177-07 Union Turnpike JA 6-7562

NEW YORK—LEVITTOWN & HICKSVILLE

Model Airplanes, Radio Control, Boats, Trains, Art Supplies. Complete Stock.
For beginner and expert alike.
PAUL PLECAN'S HOBBY SHOP
West Village Green LE 3-7379

NEW YORK—FLUSHING—LONG ISLAND

Specialists in R/C For Hobbies
We Carry the Largest Stock of Radio Control Specialties on Long Island
L. I. ESSCO R/C PRODUCTS
50-15 Weeks Lane BA 5-4279
Bet. Francis Lewis Hollis Court Bldgs.

(Continued from page 89)

the Rochester Institute of Technology, at Rochester, N. Y. This is a somewhat longer, three-year course—for the reason that it is "cooperative." After their first year, students alternate three months of classroom study with three months of actual related work in some local industry. During this period (which includes on-the-job work for the two summers as well) the student receives gross earnings of more than \$3200. His total tuition and fees for the three years (\$1110) plus books (\$197) amount to around \$1300. Thus, the student who comes from outside the Rochester area has about \$1900 (less payroll deductions) which he can apply toward his room and board.

Choosing the School

Select your school with care. Nearness of location and limitations of your pocketbook may play an important part. However, other elements may or should enter the picture. A nearby school may not be as high in quality for the particular course you have in mind, may not have the recognition in this respect as a school that is more distant. A warning if you are interested in later applying your technician training toward a full college degree: make sure that the college of your choice accepts your tech credits. Some colleges accept all credits of certain of these schools, some partial credits, and some will not allow any credits. Again, it should be pointed out that two-year schools vary as to the amount of general subjects taught along with the technological ones; this may have a bearing on your decision, one way or the other.

In any case, find out all you can about all schools that come to your attention—their professional recognition, length of time in operation, instructional facilities, the caliber of the faculty, the kind of accreditation, and how graduates have prospered. Write to the schools themselves for catalogs and pamphlets. Write to your state department of education. Ask

the help and advice of your high school guidance counselor or principal.

But don't sell the technician type of training short! If you can't afford to go to college, if you don't have enough of the right kind of credits, if both you and your advisors feel that the four-year

course is not your "meat"—remember that technicians are in demand as never before in our history, and that a certificate or diploma as Engineer's Aide or a degree of Associate in Applied Science can lead to a progression of jobs right to the top.



Like to run trains?

Then you'll like . . .

MODEL TRAINS

. . . the monthly magazine that shows you the easy way to have more fun with all kinds of model trains.

Model Trains brings you track designs for O, O-27, S and HO; photos of other fellows' layouts; facts and photos on real railroads; plus articles on easy-to-make layouts, simplified wiring, ready-to-run scale equipment . . . everything to make model railroading easy and more fun.

**Only 35c at news stands and hobby shops. Get your copy today!
Or mail the money-saving coupon and get 12 issues for only \$3.50!**

MODEL TRAINS MAGAZINE
Dept. 594-AT, Milwaukee 3, Wis.

Please enter my subscription to MODEL TRAINS at once at the money-saving rate checked below. Here's my remittance of:

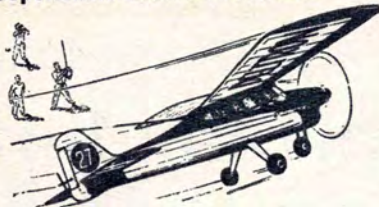
- ☐ \$3.50 for 1 year (A saving of \$.70 under single copy prices)
☐ 6.50 for 2 years (A saving of 1.90 under single copy prices)
☐ 9.00 for 3 years (A saving of 3.60 under single copy prices)

Name _____

Street Address _____

City, Zone, State _____

Dependable RADIO CONTROLS



DELTRON

PERFORMANCE GUARANTEED!



R 100
RECEIVER

Here's your dream of dependability; does away with repeated adjusting, tuning and testing. Weights only 2 oz. including plug. Size 3" x 1 1/2". Rugged. Engineered to "take it." Complete, fully assembled of new, top quality components. **\$24.95**



T 100 TRANSMITTER
3-watts + power packed into a light easy-to-carry 3" x 5" x 7" case. Micro-action keying button, telescopic antenna. Complete with tube, and crystal, less batteries.

\$29.95

24-hour Service Write Today

DELTRON CO.

5205 EAST 2nd STREET, LONG BEACH 3, CALIFORNIA

EASY TO BUILD

ACE CLUB COUPE

OR CONVERTIBLE • EITHER STYLING

Designed for powering with SUPERMITE Electric Motor

Here's a thrill! A snappy, accurate working scale model EASILY ASSEMBLED, with or without a power unit. Put in a motor and batteries and you'll be the envy of the gang. Simplified parts, mostly ready-shaped, permit styling as a typical Club Coupe or Convertible Top type. Simple enough for the beginner, yet offering plenty of detail for the expert. Complete plans and instructions with each kit.

ACE "CLUB COUPE" KIT No. 49R

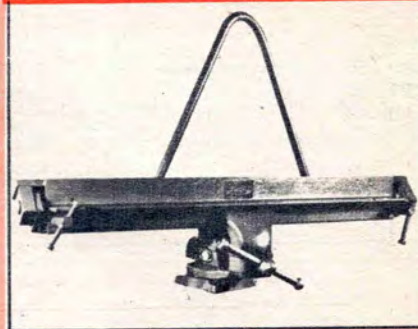
AT ALL MODEL AND
HOBBY SHOPS

\$1.25
without
Power Unit



CLUB COUPE

HOBBY



Give yourself a "brake" which forms every type of angle, bracket or channel required by the hobbyist. Aluminum, copper, brass or steel up to 18 gauge by 24 inches folds wide-fold with ease. This is the Parker Sheet Metal Folder imported from England by Television Accessories, Box 6001, Arlington, Va. \$14.95 FOB; end folding attachments cost \$1.25. Brake is assembled (vise not included).



Companion product to Ohlsson & Rice "Kwik-Start" glow plugs developed by Cheminol Corp., is "Hellz Fyre Speed Fuel," newest member of the O&R model engine fuel family. The high internal pressures built up by this new glow fuel require a more rugged plug, according to Cheminol's Harry Rice and engineers. So the fuel was not released until Kwik-Start plugs were available nationally.

The famous Covered Wagon that carried pioneering Americans across continent has been reproduced exactly in a scale model plastic construction kit by Miniature Masterpieces. Ready for assembly, price of Covered Wagon complete with three figures, three animals and a prairie green base is 98¢. Fifth in Masterpiece's "Collector's Edition in Hobby Kits" series.



MOST BEAUTIFUL OF ALL PROFILES

EASIEST IN ITS CLASS TO BUILD!!!

CIRCUS PRINCE

CIRCUS PRINCE

CIRCUS PRINCE



COMPLETELY PREFABRICATED! 27" Span A-B
only \$1.95



\$2.95



KING OF STUNT
A LION TAMER IN 40" CONTROL LINE MODEL; CLASS B-C
COMBAT

OUR PLEDGE

- NO KIT CONTAINS BETTER MATERIALS!!!
- ALL BALSA GRADE AAA!
- HARD BALSA HAND SELECTED FOR ALL STRESS AREAS!
- TOUGH PLYWOOD PARTS!
- HEAVY GAS MODEL SILKSPAN
- NO KIT CONTAINS BETTER WORKMANSHIP!!!

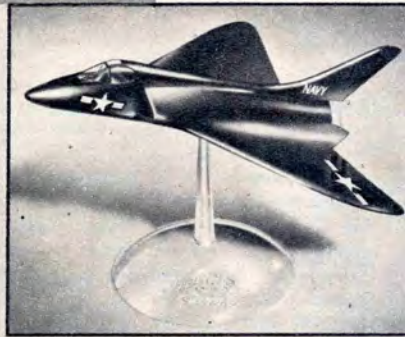
P. D. Q. PRODUCTS CO.

P. D. Q. PRODUCTS CO. MILLVILLE, N. J.

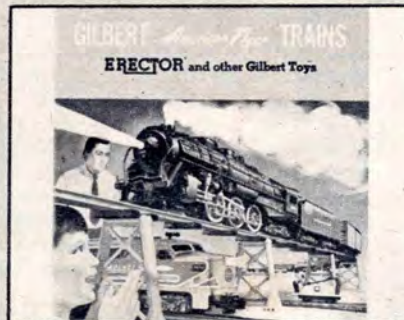
Air Trails HOBBIES For Young Men

SHOWCASE

Built to exacting specifications of the Douglas concern, designers of the full-size Navy F4D "Skyray," this miniature F4D plastic assembly kit priced at \$2.49 is released by Allyn Sales. Length of the fuselage is 11¼ in., wingspan is 8½ in. Navy insignia furnished; also a swivel mount which bears name of the aircraft. Speeds in excess of 752 mph were reached by the big F4D.



A. C. Gilbert Company's new catalog which includes American Flyer model trains is free from the concern at Erector Square, New Haven 6, Conn. In considerable detail you get the reasons for Gilbert's well-known "S" gauge track size and its two-rail "T" shape track. The full fleet of Gilbert's American Flyer train and car sets is illustrated, plus all the optional equipment and accessories.



This smartly styled but inexpensive Kodacraft Print Roller by Eastman Kodak Co. is designed for amateur photographer who likes to develop and print his own snaps, and wants to ferrotype glossy prints. Roller is 4 in. long, rubber covered and has easy-grip nickel-plated steel handle. Fitted with brass bushings to give a smooth even-rolling action, resulting in high quality "glossies." 95¢



Jim Walker Firebaby Biplane

Stunts like a dream and has power to spare. Royal Spitfire engine has Jim Walker "Super-charger" modification for greater power, instant starting, fuel economy. Buy it ready to fly. All parts finished, painted, fuel-proofed. Span 19 in., wt. with motor 4½ oz.
Complete with engine.....\$9.75
Without engine.....3.50

A-J AIRCRAFT CO.
1166 N. E. 31st Ave., Portland 12, Oregon



\$18.95 POSTPAID

You'll thrill to the whine of the engines as you gracefully lift this 70" span bomber off the ground, then pull it up into a steep climb. The steady pull on the lines will give you the satisfaction of knowing the thrill of twin engine power. The mere sight of this model will make it the talk of the flying field. It can be yours, too, in this wonderful Scalemaster kit. This model construction kit is complete down to the aluminum foil covering, that makes it a perfect replica of the prototype. The big two sheet plans are also packed with easy-to-follow detailed drawings, to help make it a flying masterpiece. All materials (except engines and liquids) are included, such as: turned-balsa cowlings; full-color scale size decals; scale, rubber-tired wheels; pre-cut plywood parts; all balsa covering; all balsa parts, printed on sanded smooth straight grain top quality balsa; motor mounts; wire; hardware; etc. Easy to build and fly.

SCALEMASTER MODEL CO.
P.O. Box 222 GRAND RAPIDS, MICH.

Nothing BEATS A HOBBY!

3 New OPERATING MODELS by **IDEAL MODELS** WITH

EZY-FORM
HULL CONSTRUCTION
Length 18"
Beam 7"

AQUA KING CRUISER
No. 1535
OPERATES with GAS or ELECTRIC MOTORS
DELUXE CABIN CRUISER
3.95 WITHOUT MOTOR
Completely prefabricated Easy-to-assemble. Preformed sides and bottom.

SPEED DEMON RACER
No. 1534
OPERATES with GAS or ELECTRIC MOTORS
Beam 6" Length 15"
Completely prefabricated plywood and balsa parts. Ezzy-Form Hull construction.

SAIL KING
No. 1533
To meet the demand for a larger sailboat, we present the "Sail King" designed by Tex Foster (Model Yacht Authority). Each part prefabricated.
SAIL BOAT Hull 22"
SEE YOUR HOBBY DEALER NOW! 5.95
• Illustrated Catalog 10¢

IDEAL MODELS
24-26 WEST 19th ST., NEW YORK 11, N.Y.

KAPPAK
EASIE PLASTIC WELD

MODEL Gas Tanks

- Guaranteed LEAKPROOF
- Will not discolor fuel
- Soldered inside and out
- Die stamped Non-Corrosive plated steel
- 14 sizes of wedge and rectangular tanks

FROM 39¢ to 69¢ EACH
AT ALL HOBBY-CRAFT STORES

Distributed by
MOD-KRAFT LINES
mod Kraft Co.
"26 Years of Service to the Hobby Trade"
840 Union St., New Orleans 12, La.

Only PROCESSED FUELS

Will Give You
Trouble-Free
WINNING PERFORMANCE!

Only
francisco
fuels*

ARE PROCESSED 4 WAYS
FOR YOUR PROTECTION

POWERMIST • SPITFIRE
BLUEBLAZER • TOPSOL

*FUEL OF THE CHAMPIONS
3015 Glendale Boulevard, Los Angeles 39, Calif.

E-Z-JUST Plastic CONTROL HANDLES



NOW
with
PRE-FORMED
loops!

Quick hook-up and unhook!
The cable loops are already
formed for you! Adjusts and
locks quicker than any other
handle,—can't slip. 150-lb.
min. test. Hot fuel-resistant.
"Standard" 5-inch size for all
flying. "Hot Rock" 4-inch size
for speed flying.

only **85¢**

Look for them in the red-
white-and-blue boxes!

TEST STANDS



Hardwood with ad-
justable clamps and
pins for quick, tight
lock up of any size
engine. **\$1.75**

"MINIMOUNT" for
engines up to .19
displacement. **\$1.25**

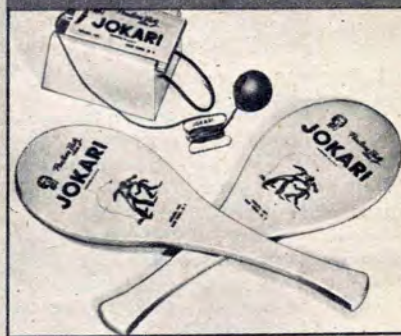
E-Z-JUST

AT ALL
LEADING DEALERS

PHIL-LEYS CHEEKTOWAGA 25 NEW YORK

HOBBY

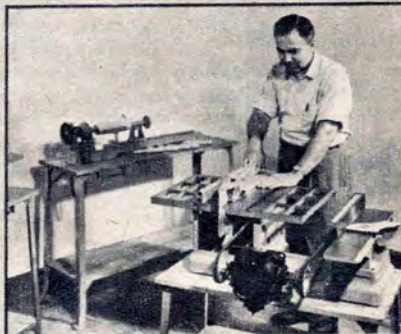
Semi-circular Tennis is the way you might describe this zany game—but it's real fun and real sport. Jokari is the official name; it's a little like tennis, squash and handball. A player stands on each side of the weight-base; one sends the ball out and away; rubber cord brings it back smartly to opponent. Jokari, Inc., 116 Nassau St., NYC 38 (\$3.95, \$5.95, \$7.95).



Two Past Favorites, the Zing and Trainee control line kits of Top Flite have been returned to production and sale. The profile Trainee (\$3.95) is shown; designed for .23 to .49 engines. With a 30-inch wingspan and 26-inch overall length it is easily assembled and can be flown with elevator control disconnected. Companion plane, the Zing (\$4.95) is a speed and contest model.



This New Duro Master power tool workshop features 5 full-size individual power tools with 1 motor to run them all. Secret is a physical changeover you make in motor from unit to unit that takes only 10 seconds. All this is illustrated in a 16-page catalog showing entire workshop and accessories available. From Duro Metal Products, 2651 N. Kildare Ave., Chicago 39, Ill.



TIME IT!

YOU DESERVE AN ACCURATE TIMER



ONLY
\$2.25

The TIMIT (pronounced time it) incorporates modern design along with years of practical model engineering experience. Easy to install, light in weight (approx. 1/2 of an ounce), simple in operation, it has a needle type adjustment for greater dependability and accuracy. The TIMIT can be adjusted from 0 seconds to 2 minutes with a slight turn of the adjusting screw to give you "split second timing." It will retain its setting for flight after flight.

The TIMIT is the first in a line of new products by Lud Kading, designer of the Infant and other engines. It is proven the most accurate and dependable flight timer you can install in your plane.



Kading
Specialty Co.

P. O. Box 484
COMPTON
CALIFORNIA

NOW THE VERSATILE RITE-CONTROLLER

Yes, the control box you have dreamed of using.

CONSIDER THESE OUTSTANDING FEATURES

- Any Direction velvet stick control AND Automatic self-centering
- EXCLUSIVE EASILY INTER-CHANGEABLE ADD-A-RITE plates enable you to use almost any control system such as:
- 100% TRUE SINGLE OR DUAL SIMULTANEOUS PROPORTIONAL control with a single escapement, on one channel!!! No escapement gadgets needed.
- Macuator or actuators
- Even multi-tone/channel servos!!!
- AND other systems.
- Uses 2 flashlight cells
- Built for foolproof use to last for years. MACHINED BRASS GEARS
- Complete with 10' heavy duty cord and plug.



AND NOW, STARTS AND STOPS AT ANY Selected control position. Order direct. Only \$18.95 complete with plates postpaid with prepaid order or C.O.D. Money back guarantee. Dealers write.

• Or 10', 5-wire cable for multi-tone/channel systems. Patent applied for.

RITE-CONTROL SPECIALS

NYLON, IDEAL COVERING MATERIAL, FULL 36" WIDE YARD ONLY \$1.25 Postpaid
STORAGE BATTERY 36 Volts, Only 5 oz. \$1.95
Receiver SENSATIONAL "ECE", with tube \$12.50
ACTUATOR 1.6 oz. rotary, rugged, ball-bearing, powerful. Can easily move large surfaces. ONLY \$2.75
Servo, BOMER develops 14 oz. thrust Only \$12.50
Relay SIGMA 41FS, 10,000 ohms SPNO, with A-F choke, thermostat, neon lamp, resistors, etc. A \$5 plus value ALL FOR ONLY \$1.95.
All items guaranteed. Free bonus with all orders.

RITE-CONTROL CO.

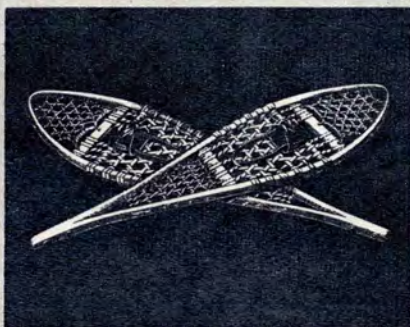
Box 37 Williamsburg, Brooklyn 11, New York

SHOWCASE

"The Jet Air Age and Your U.S. Air Force" is the title of a most informative booklet which will interest any young man planning his future. It is in sections (well illustrated by Jim Ray) covering the various Air Force commands and services. Ask for a copy at AF Recruiting in your community or write for one to Air Force Recruiting, Washington 25, D.C.



Quarter-sized Miniature snowshoe kit is something novel for any lover of great outdoors. \$3 kit set includes 2 pre-bent drilled white ash frames, 4 drilled white ash thwarts, 4 copper rivets with burrs, 2 punched calfskin toe straps, 38 feet of fine goatskin lacing, complete illustrated instructions. 13 x 3 1/2 inch size. Available only from Pride Models, 16D Cedar St., Binghamton, N. Y.



Put It On and it sticks—you can decorate and protect a table top in 10 minutes with new waterproof adhesive-backed plastic fabric that wipes clean with damp cloth. Con-Tact, the new product now reaching stores, was developed by Comark Plastic Division of Cohn-Hall-Marx Company in conjunction with Monsanto's Plastics Division from a formulation of Utron vinyl.



NINE NEW OUTBOARDS



Chris-Craft's 18' Outboard



Chris-Craft's 17' Outboard

Nine new outboard construction kits now available at all dealers. All an inch to the foot scale or larger. Actual large boat construction, framed hulls planked. Each kit complete with cement, decals, metal fittings, blade, sandpaper etc. Chris-Craft's 21" Monterey Cabin Express Cruiser at \$3.95. Chris-Craft's 17" Speed Boat at \$3.95. Chris-Craft's 18 foot Express, 18" long at \$3.95. Chris-Craft's 14" Hornet runabout, 17 1/2" model at \$3.95. The new 16" "APACHE" conventional step hydroplane at \$2.95. Chris-Craft's 28" Cruiser, 25" Express, 21" Sportsman, 21" Express now show outboard motor installation as well as inboard. WRITE for literature on 18 boat construction kits—\$2.95 to \$9.75, sixteen-inch to thirty-five-inch models.

DUMAS PRODUCTS

2114 S. Alvernon, Box 6096, Tucson, Arizona
1944—World's largest manufacturer of power boat kits—1954

"for your R/C enjoyment"—

SWANEE



950

P.P. 50c

For a new and relaxing experience. "SWANEE"! No fuss or muss; just flick the switch and watch the paddle wheel chop-chop the boat away from the shore. It's fun without R/C, but more so with it. And when you take it home, she will be proud to have it in the picture window.—28" Overall, 9" Beam. Electric powered. Die-cut & Colored TEAKWOOD. COMPLETE WITH CHAIN AND SPROCKET DRIVE. See it at your dealer.

NEW R/C WHEELS

2 1/2" dia. \$2.00 3" dia. \$2.25
2 3/4" dia. \$2.25 3 1/2" dia. \$2.50
(Hard Maple brass bushed hubs)
3 1/2" dia. (DURAL HUB) \$3.50
Price per Pair, P.P. Singles at half price. Tire-on-Hub Guarantee. Large air volume bouncy tires your best protection.

5-1 R/C WINDER

1 1/2" dia. gear case... \$1.25 P.P.
Superfine Jap Tissue
INSTRUCTIONS: Apply dry. Use thinned dope for adhesive. Water dope. Many thinned coats for doping. Red, White, Blue, Yellow and Orange—25 sheets for \$2.00 P.P.

THERMIC 100

High Performance Model Glider for Radio Control, Thermal and Slope Soaring



SPAN—100 in.
LENGTH—50 in.
AREA—800 sq. in.
GLIDE RATIO—18:1
AIRFOIL—NACA 6409
"THERMIC 100" can easily carry 7 lb.
Price \$10.00 P.P.—50c

Radio Control Models, Box 333, Sta. D, New York 3, N.Y.

CAMERA FANS SAVE MONEY ON COLOR FILM

100% Fresh KODAK COLOR FILM

1955-56 dated film in originally sealed package. Fully guaranteed by the manufacturer, outdoor or indoor. Price includes processing and mounting (35mm) by manufacturer.

Size	Reg.	Spec.	Super Special
8mm x 25' dble roll	3 rolls — \$11.25	3 for \$9.75	10 for \$30.00
8mm x 25' dble mag.	3 mags. — 13.95	3 for 12.00	10 for 37.20
16mm x 50' mag.	3 mags. — 20.85	3 for 18.00	10 for 56.00
16mm x 100' roll	3 rolls — 31.20	3 for 27.00	10 for 85.00
35mm x 20 exp.	3 rolls — 9.75	3 for 8.75	10 for 26.00
35mm x 36 exp.	3 rolls — 14.85	3 for 13.20	10 for 39.50

SPECIALS

KODAK BROWNIE HAWKEYE OUTFIT COMPLETE \$13.65

KODAK DUAFLEX III KODET OUTFIT COMPLETE \$21.75

Send check or money order, add approximate postage with order F.O.B. N.Y. Sorry, no COD's. Excess postage refunded. Price subject to change without notice.

KING PHOTO SUPPLY N. Y. 1, N. Y.
246—5th Ave.

FLYBOY!



FLY-BOY is a remote-controlled, battery-operated F-84 model that flies wherever you want it to go. Push the throttle, ease back on the stick and FLY-BOY takes off—banks left or right and eases to a landing with you at the controls.

retail price
\$7.95

AIRTOYS, INC.

P. O. Box 5904-H5
Bethesda, Maryland



BROTHER, IT IS HOT!*

*So says Lyman Armstrong, Sec.-Treas., of the Twin Cities Model Airplane Club "...fellows using the new "2000" fuel have to adjust their power patterns to take up the added power obtained from the fuel. Short and sweet, brother it is HOT!" If you want SUPERCHARGED performance...as much as 2000 ADDITIONAL r.p.m. get a can of 2000 RACING today!

OHLSSON MFG. CO. 1547 W. 16th Street, Long Beach, Calif.

R/C AND ENGINE TRADE-IN PLAN

ECE Receiver 27 1/4 MC \$12.50 ECE Transmitter 27 1/4 MC \$22.95

33 1/3% ALLOWANCE ON ANY TRADE-IN. UP TO 100% ON EXTRA SPECIAL TRADES

1. We will allow 33 1/3% trade-in allowance for ANY old engine toward the purchase of any BRAND NEW engine or listed R/C equipment. Send trade-in plus check or money order for balance. C.O.D. orders accepted on deals when you send in a trade. On straight orders include at least \$1.00.
2. WHAT ABOUT THIS UP TO 100% BUSINESS? While the great majority of trade-ins fall in the 33 1/3% bracket, there are trade-ins that are worth more. That's just plain common sense. The engines that we give more for are like new engines or those real rare oldies like E.H. Singles, Thrush, Hurricane, Morton 5's etc. Also we like the racing engines—Mortons, Doolings, McCoy's, Arden ball bng. etc. Look up some of those old-time builders! Perhaps you were given or won a new engine that is the wrong size or type for you—TRADE IT! Drop us a card telling us WHAT you have and what you WANT.
3. SPECIAL R/C OFFER—With every full price purchase (no trade-in) of an ECE Receiver, we will throw in FREE 12 matched props. With every ECE Transmitter we will give you FREE 12 props plus TRANS-MITTER Batteries.
4. Replies, orders, acknowledgments by return mail. 24 hour service.

Send 10 cents for next four copies of our used engine list, used R/C and what have you.

ENGINES LIST LESS 1/2		ENGINES LIST LESS 3/4	
Allyn Sky Fury .049 \$4.95	\$3.37	McCoy 19 Sport... 9.95	6.62
Allyn Sea Fury .049 9.95	6.62	McCoy 19 R.H. 12.95	8.65
Atwood Outboard... 9.95	6.62	McCoy 29 Sport... 11.95	7.97
Atwood Inboard... 5.75	3.84	McCoy 29 R.H. 16.95	11.22
Elf Twin Glo... 21.50	14.34	McCoy 60 R.H. 24.95	16.70
Elf Twin Glo... 24.50	16.30	O.K. Cub .099... 6.95	4.64
Elf Four Glo... 45.50	30.34	O.K. Cub .14... 7.95	5.30
Elf Four Glo... 49.50	33.00	O.K. Cub .18... 8.95	5.97
Fox 19... 12.50	8.34	Space Bug... 6.95	4.64
Fox 19 2 Speed... 13.50	8.99	Space Bug Jr... 3.95	2.64
Fox 25... 12.50	8.34	Them Hopper... 6.95	4.64
Fox 25 2 Speed... 13.50	8.99	Veeco 29... 14.95	9.97
Fox 35... 14.95	9.97	Veeco 31... 14.95	9.97
Fox 35 2 Speed... 17.45	11.62	Veeco 35... 14.95	9.97
Fox 38... 14.95	9.97		
Fox 38 2 Speed... 17.45	11.62	McCoy .049... 5.95	3.97
Fox 58... 22.50	15.00	McCoy .099... 7.95	5.30
Fox 58 2 Speed... 24.00	16.00	O.K. 076... 7.50	5.00
K & B 18... 10.95	7.30	O.K. .049... 5.95	3.97
K & B 18 2 S... 11.95	7.97		
K & B 18 2 S... 16.95	11.22	DIESEL ENGINES	
K & B 23... 13.95	9.29	ECE Receiver	
K & B 23... 15.95	10.62	ECE Transmitter	12.50 8.34
K & B 30... 9.97	6.62	ECE Transmitter	27 1/4 MC 22.95 15.30
McCoy 9... 7.95	5.30	27 1/4 MC	22.95 15.30

OHIO RESIDENTS INCLUDE 3% TAX

FAST ENGINE EXCHANGE
Box 821, Warren, Ohio

What's Your Hobby?



Murphy Builds Unusual Boats

■ Edward William Murphy of Wabash, Indiana, is a fellow with quite a few hobbies. For one thing he likes to fish and not in the usual spots, either.

This in turn led to a subsidiary hobby—building various kinds of boats. To reach hard-to-get-at places Ed built this peculiar-looking but very practical air-prop-driven out-rigger.

It attains up to 10 miles per hour and moves very quietly through the water without frightening the fish.

"This boat," reports Mr. Murphy, "is one built from an airplane's wingtip pontoon and has outriggers. The pontoon is six feet long with five-foot outriggers. I have used a Power Product two-cycle engine of 1.8 horsepower driving a propeller off the engine of a target drone miniature plane.

"I have gone through lily pads and as little as one foot of water without stalling. You can't do this with an outboard.

"This job is just plumb right for fishing and sport. With a 5 hp engine you should go around 25 mph since the whole outfit only weighs 45 pounds complete. It comes apart quickly for easy transporting in the trunk of an auto."

Now . . . What's your hobby? Is it of special interest to mechanically minded young fellows? If so, tell us about it! Send photographs, details on how you got started, to "What's Your Hobby," Air Trails HOBBIES, 304 E. 45th St., New York 17, N. Y. We pay you \$25 for first photo, \$5 for extra photos so used.

ADVERTISERS' INDEX

NOVEMBER, 1954

Ace Products.....	92
Ace Radio Control.....	88
Acme Model Eng. Co.....	64
Airbays, Inc.....	95
A-J Aircraft Co.....	93
Allyn Sales Co.....	78
Amercraft.....	81
American Telasco, Ltd.....	18, 73
America's Hobby Center, Inc.....	8, 9
Atwood Motors.....	59
Babeck Radio Engineering Co.....	62
Berkeley Models, Inc.....	97, 98
Bonner Specialties.....	87
L. Breaux.....	86
C & H Surplus Specialties Co.....	6
Cal-Aero Technical Institute.....	89
Cavacraft.....	13
Chemical Corp.....	82
Comet Model Hobbycraft, Inc.....	75
Consolidated Model Eng. Co.....	73
L. M. Cox Mfg. Co., Inc.....	91
Crosby's Hobby Centre.....	89
Darwin Model Aircraft Co.....	89
Dealers Hobby Supply.....	17
de Bolt Model Engineering Co.....	95
Deltan Co.....	15
Dumas Products.....	85
Dyna Model Products, Inc.....	75
E & H Model Hobbies.....	74
Electron Products Co.....	72
Electronic Miniatures.....	71
Electronic Specialty Supply Co.....	77
Embry-Riddle School of Aviation.....	71
Enterprise Model Aircraft & Supply Co.....	77
Eureka Importing Co.....	71
Famous Model Boat Co.....	91
Fast Engine Exchange.....	96
F-B Model Aircraft.....	78
Fisher Body, Div. General Motors Corp.....	69
Forster Brothers.....	81
Francisco Laboratories.....	94
Gordineer's Standard Cycle Service.....	91
Grish Brothers.....	87
Paul K. Guillow.....	84
Gull Model Airplane Co.....	74, 79
Gyro Electronics Co.....	82
H. E. Harris Co.....	82
Haw-Ki Hobby Supply Co.....	80
Helicopters for Industry, Inc.....	79
Henry Engineering Co.....	10
Hickner Tool & Model Works.....	3rd Cover
Hobby Helpers.....	76
Holland Engineering Co.....	74
Ideal Models.....	93
Indiana Technical College.....	86
James (Jamaica Co. Hobbies, Inc.).....	91
K & B Manufacturing Co.....	2nd Cover
K & O Models, Inc.....	86
Kading Specialty Co.....	94
Kenhi Model Products.....	69
King Photo Supply.....	95
L. I. ESSCO R/C Products.....	91
Lionel Trains.....	7
Master Modelcraft.....	70
Mercury Model Airplane Co.....	77
Midwest Products Co.....	91
Miniature Aircraft Corp.....	59
Mod-Ad Agency, Inc.....	8
Mod Kraft Co.....	93
Model Craft Hobbies, Ltd.....	73
Model Trains Magazine.....	84
Monarch Model Aircraft Co., Inc.....	88
Monogram Models.....	60, 81
Northrop Aeronautical Institute.....	14
Ohlsson Mfg. Co.....	86
Pactra Chemical Co.....	80
Park Hobby Center.....	91
Parks College of Saint Louis University.....	3
PQ Products Co.....	92
Phil-lays.....	94
Pico Model & Hobby Shop.....	91
Paul Plean's Hobby Shop.....	91
Polk's Model Craft Hobbies, Inc.....	58, 68, 76, 88
Ra-Con Eng. Co.....	77
Radio Control Models.....	95
Radiomodels.....	85
Rich's Hobbystown, Inc.....	91
Rite-Control.....	94
Russell Bros.....	96
Scalemaster Model Co.....	93
Scientific Model Airplane Co.....	54, 55, 56, 57
Sig Manufacturing.....	89
Silo Art Company.....	Back Cover
Ship's Island Hobby Shop.....	91
Space Craft.....	10
Southwestern Model Mfrs.....	90
Spartan School of Aeronautics.....	5
Victor Stanzel & Co.....	64
Sterling Models.....	66, 67, 75
Sullivan Products.....	80
Talmeo Microvics.....	80
Testor Chemical Co.....	50, 51
Thoresen's.....	85, 89
Top Flite Models, Inc.....	11, 63
Trost Modelcraft & Hobbies.....	87
United Hobby Dist.....	87
W. H. Electronics—Models.....	91
Western Distributors.....	74
Western Model Distributors.....	82
X-Acto, Inc.....	90

While every precaution is taken to insure accuracy we cannot guarantee against the possibility of an occasional change or omission in the preparation of this November 1954 index.

SUPER SPEED...

by

Berkeley



FIRST IN OPEN — 1954 NAT'S.
136.93 MPH

SUPER WHIRLAWAY "A-B"

For .19 to .29 Engines—12½" Wingspan

\$4.95



\$2.95

MINI WHIRLAWAY "1/2A"

For .049 Engines—8¼" Wingspan

Each Kit Contains:

- Formed Aluminum Wings
- Carved and Hollowed Body
- Jim Walker "U-Control"

- Plywood Tail Assembly
- Shaped and Drilled Bonnet
- All Necessary Hardware
- Full Size Detailed Plans

Designed by: Bob Elliot

The "Mini and Super Whirlaway's" are Berkeley's newest competition speed designs. Minimum frontal area, light weight design, correct angular set-up, balance and area, plus mirror-smooth aluminum wings combine to give you a design that flies fast low and level.

buy BERKELEY at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

Hobby-Model World

(Continued from page 32)

events at Cleveland indoor competitions are hand launched balsawood gliders, paper-covered endurance models, micro-film jobs and flying scale craft. The last scale event was captured by James Bowers, 19, whose Bleriot monoplane flew for 2 minutes, 2.3 seconds. Second went to a Luscombe Sedan, third to a Moraine-Saulnier midwing. Two minutes plus with a scale job is really flying!

Cleveland can lay claim to another title: home of the National Model Plane Exhibit Contest. This is sponsored yearly by the Chamber of Commerce, Air Foundation and Community Chest. It's a contest for workmanship, plane entries being judged for accuracy, detail and appearance; no flying. Many hundreds enter this event each year.

New Canadian Headquarters. Newest address for the Model Aeronautics Association of Canada is 2109 Bleury St., Montreal, P. Q. Canadian modelers should affiliate with their national organization; write MAAC HQ for information on membership.

Some Smeller! Story is told about Harry Rice, head man and engineering brains behind Ohlsson & Rice and the Cheminol Corp. At a big California meet Harry was making the rounds watching the contestants preparing for flights when he spotted Howard Nevens of Napa brewing up a concoction labeled appropriately enough "Secret Stew Mix #3." Learning who Harry was, Howard challenged him to name the ingredients of the SSM#3. Within a few moments after feeling and smelling the mixture Rice called off the

individual ingredients and proportions used of each, to the utter amazement of Nevens. After this Howard shifted over to the O&R blend that Harry recommended for his particular need. P.S.: Nevens placed among the winners.

—The Dopester

WESTERN ROUNDUP

The CAP contest at Mile Square was beyond a doubt the contest which will long be remembered out here on the Coast. It can be said that for the first time modelers were allowed to fly their planes at any time and on any day of the two-day meet. Some guys elected to make their flights on Saturday—some on Sunday, some took two flights Saturday and the third on Sunday. If there ever was a contest which was wide open, this was it.

Most unusual was the lack of gripping—after all, if the model builder didn't fly when he wanted to, it was his own fault. The contest was admirably run by model builders who, rather than fly themselves, pitched in and helped. They had every popular event in the outdoor category—carrier deck, speed, combat, stunt, R/C, and all classes of free flight. On two legs of the runways all one could see was model builders.

The carrier deck event was pretty well sewed up by the "Flying Esquires" of Long Beach—those guys even went to the trouble of building their own carrier and having it christened at Los Alamitos, scene of the 1952 Nats. Most of these flyers were using a third line mechanical-butterfly-Jim Walker-exhaust restrictor for their two-speed. This third line is hooked over the wingtip to prevent accidental slowing of engines during take-off and is not pulled loose until the high speed run is completed.—Dick Everett

"REV-UP"

A Superior Lubricant for ALL Model Engines!

Add 500 R.P.M. to Your Engine Rating—
by adding a few drops in the intake while the engine is running. One treatment lasts for hours.

Used in Atomic Energy Plants —

USED BY FIRST PLACE
WINNERS AT THE
'54 NATIONALS!



50c

Per Tube...

See instructions on tube.
Enough to treat ten engines!

**Guaranteed to reduce Friction 37%
in all gas and diesel engines...**

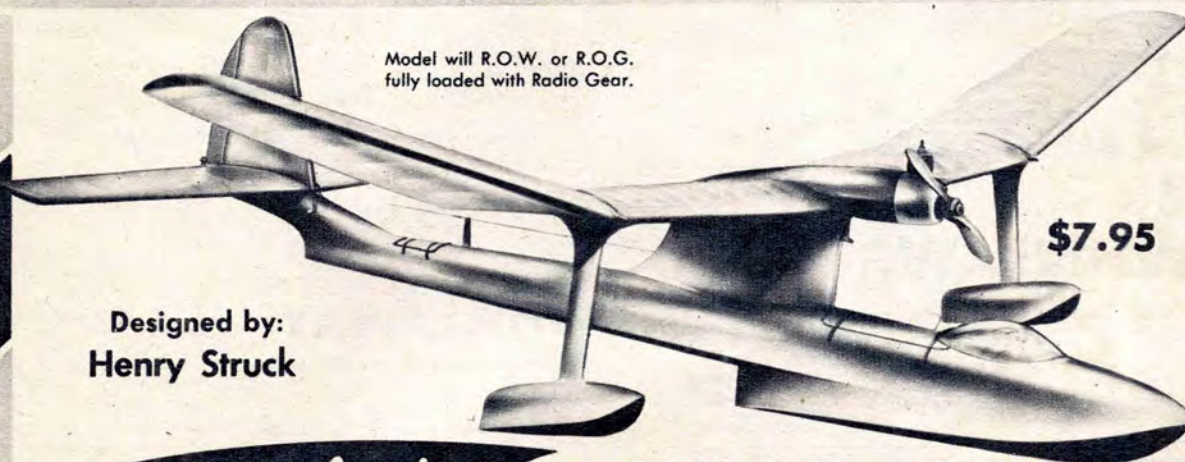
Tested by National Advisory Committee for Aeronautics. National Bureau of Standards says — "Friction less by 50 to 60% than Navy Reference Oil 2110." A Chemical Engineering Magazine says — "Lubricates perfectly at 1200 degrees." You can hear the improvement instantly.

buy BERKELEY at your local dealer!

The First All-Purpose Gas Model!

R.C. AMPHIBIAN...

Fly it on Ponds—Rivers—Bays—Lakes or Flying Fields!



Model will R.O.W. or R.O.G.
fully loaded with Radio Gear.

Plans Include: Radio Control Installation
Details; Paa-Load Dummy Installation; Hyro
Flying Hints; Construction Details; Various
Engine Installations; Building Instructions.

Designed by:
Henry Struck

\$7.95

Fly it Five Ways:

- Seaplane (R.O.W.)
- Landplane (R.O.G.)
- Radio Control
- PAA-Load
- Clipper Cargo

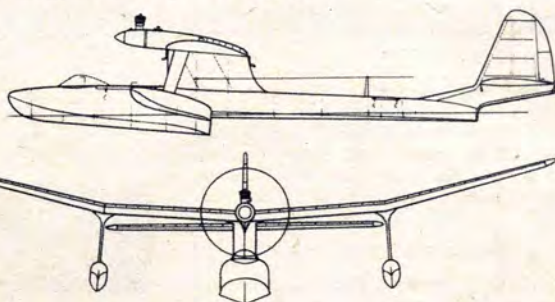
Berkeley's

"SEA-CAT"

N.A.C.A. Type Planing Hull Design Amphibian

For .15 to .25 Engines — 68" Wingspan

- Detailed Full Size Plans
- Shaped Leading, Trailing Edges
- Formed Celluloid Bubble Canopy
- Die-Cut Balsa and Plywood
- Formed Metal Ring Cowl
- Hardware, Covering Material
- Selected Strip Balsa



Here is a model design that has been a full thirteen years in development. It's N. A. C. A. Planing Hull design makes water take-offs easy. Its hull is easily accessible for radio control equipment, PAA Dummy Pilot or Clipper Cargo.

Proven performance on the original test models include: First International Radio Control Flight; Fourth place in a field of seventy in the Mirror Flying Fair (The first R.C. contest for both Struck and the "Sea-Cat"); First in Radio Control at Screamin' Demons Long Island Sound Hydro Championship; Second in PAA-Load at the same contest; and Precision flights carrying over a pint of fuel at the First "World Model Air Olympics."

This airplane is what many model builders have been waiting for. You can now fly your own "Sea-Cat" with perfect take-offs and landings from water or land. Start yours today!

"1/2 A" FLYING SCALE...



\$2.95

CESSNA "180"

Cessna's newest light plane, reproduced authentically and in detail. Perfect proportions for free-flight. Full Size Detailed Plans show rubber and control line adaptations. Pre-fabricated construction, Decals, etc.



\$2.95

"SUPER CADET"

For .035 to .049 Engines—35" Wingspan
1" Scale—Free-Flight, Rubber or Control line
.049 to .099 Engines for Control line use

This is the current version of the "Interstate Cadet," many time National's winner. Authentically detailed and structurally re-designed for "1/2 A" free-flight. Full Size Plans show rubber, control line adaptations, etc.

buy

BERKELEY

at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.



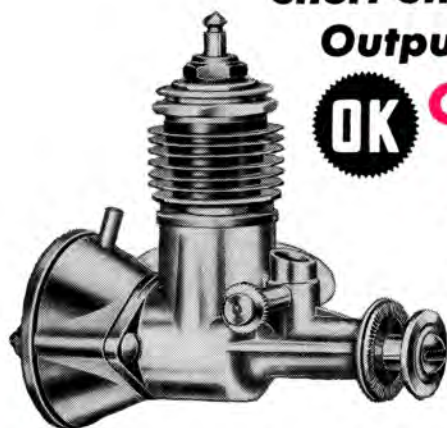
Beginners and Experts both say:
"OK" for LESS Weight
and MORE Power

OK CUB
.049B



HERE'S a light-weight Cub that is a flashy performer with plenty of power for general flying. Has both radial and lug mountings. Versatility that makes it equally good for beginner and expert alike. Assembled units only, complete with fuel tank, prop and spinner **\$4.95**

Short Stroke, High Output for the Expert
OK CUB .049X



A top performer in the 1/2 A Class for the advanced hobbyist. Displaces .049 with a bore of .420 and a stroke of .360. Lighter weight and greater power make it ideal for contest flying. Radial mounting for either direct connected or remote fuel tank. Combination package containing engine, prop, fuel tank, extra rear cover and neoprene tubing. **\$5.75**

• **For Champion Performance always use OK FUELS only 85c pint OK Glow Plugs 59c each**

SEE YOUR DEALER . . . OR WRITE DIRECT

For PRICE, POWER, and PERFORMANCE



A Complete Line of PROVED Miniature Engines and Accessories



"OK" GLOW FUEL
 "OK" DIESEL FUEL
 Pint 85¢



"OK" GLOW PLUGS
 Short or long —
 59¢



"OK" CUB .049B
 Power Kit
 \$3.95



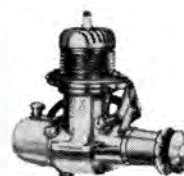
"OK" CUB .074
 \$5.95



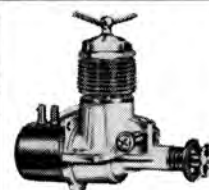
"OK" CUB .099
 \$6.95



"OK" CUB .14 \$7.95
 "OK" CUB .19 8.95



"OK" HOTHEAD
 \$10.95



"OK" CUB DIESELS
 .049 \$5.95
 .075 7.50



"OK" COMBINATION PACKAGES
 CUB .049X \$5.75
 CUB .074 6.75
 CUB .099 7.75

HERKIMER TOOL & MODEL WORKS

78 HARTER STREET

HERKIMER, N. Y.

**Oil Painting
is fun**

**This New
Silhouette Way**

Silloo

**shows you how
to lay in color masses
the way skilled artists do . . .**

It's new. Entirely different from any other on the market. No numbers to follow. Instead it introduces you to an easier, more fascinating method of picture composition that trains you in the essential "feel" of fine art.

Silloo actually shows you how to break down a complex scene or subject into its component parts of light and shadow, color and intensity. How to lay in the color masses separately. Until all suddenly blends into an entrancing whole as you complete your work.

**An Absorbing Hobby, Relaxing and
Refreshing To Mind and Body**

Silloo is amazingly easy to follow. Even a beginner can turn out creditable work the very first try. Yet it will capture and absorb your entire interest and attention. Lead you unconsciously to relax mind, muscle and body. Leave you with the proud sense of real mastery and accomplishment.

Ask your hobby dealer today, or drop a post-card for complete details and name of nearest retail store.

SILLOO ART Company

DEPT. 21

HERKIMER, N. Y.



12 Fascinating Art Subjects to Choose

Landscapes, seascapes, woodland scenes, still life, moderns! No matter what your taste or interest, Silloo offers a subject to start you painting. Then notice how your interests and appreciation grow. You'll want them all before you're through.



**Silloo
Oil Painting Set**

Complete with mat
for framing . . .

Only **\$2.98**

Contains:

all the material needed to complete a lovely painting. Plastic panel measuring 12" x 16" with pre-sketched Art Subject. Color mass charts for each color. Pre-mixed artist's oil paints. Two artist's brushes. Mat for framing, and full instructions.